

massachusetts Forward. DOT MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

ARLINGTON

MASSACHUSETTS AVENUE - ROUTE 2A/3

MASS.		1	177			
STATE	FED. AID PROJ. NO.	NO.	SHEETS			
		SHEET	TOTAL			

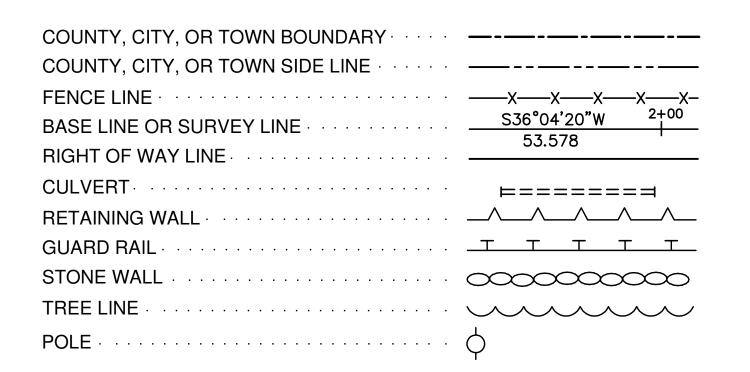
TITLE SHEET & INDEX

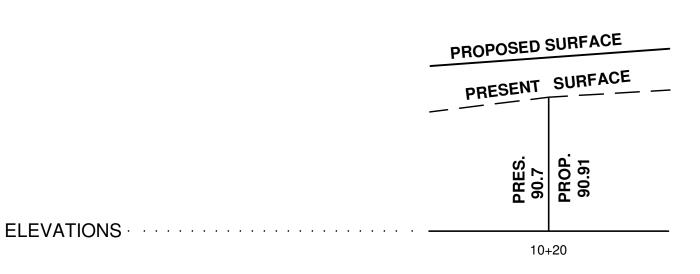
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CONVENTIONAL SIGNS





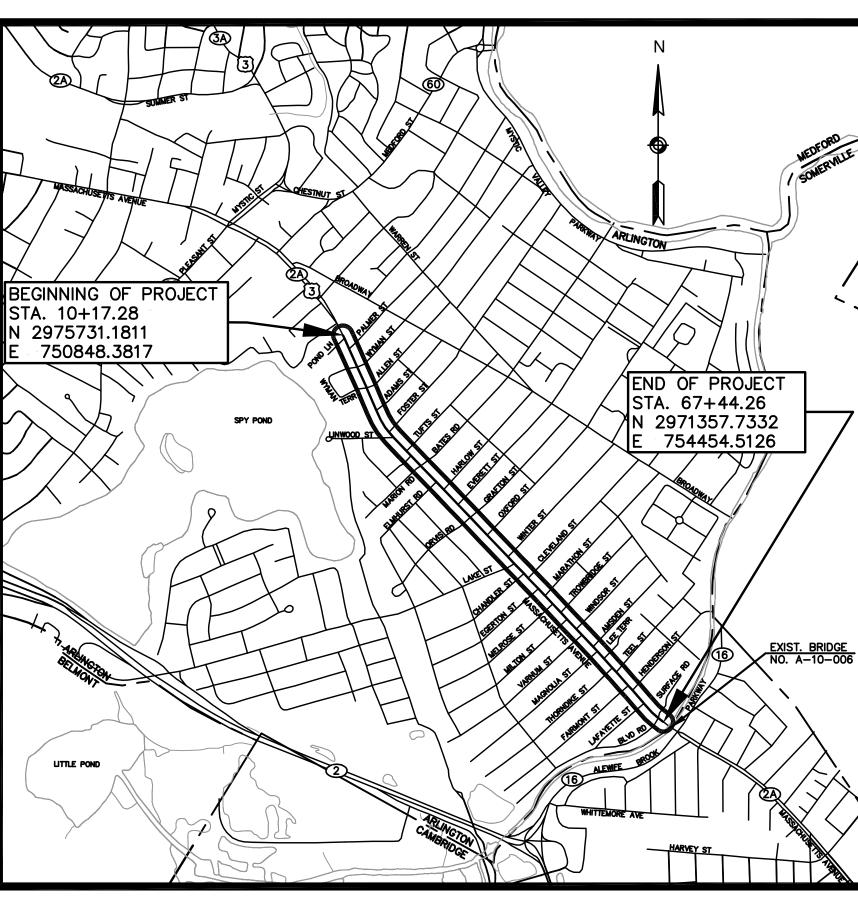
MASSACHUSETTS AVENUE - ROUTE 2A/3 POND LANE TO CAMBRIDGE CITY LINE

PLAN AND PROFILE OF

IN THE TOWN OF

ARLINGTON MIDDLESEX COUNTY

FEDERAL AID PROJECT NO.



SCALE 1" = 1000'

LENGTH OF PROJECT = 5,726.98 FEET = 1.085 MILES

THE MASSACHUSETTS HIGHWAY DEPARTMENT 1988 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES; THE SUPPLEMENTAL SPECIFICATIONS, DATED JUNE 15, 2012; THE 2012 THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS; THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING; AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AS AMENDED WILL GOVERN

DESIGN DESIGNATION

DESIGN SPEED 16,500 19,100 ADT (2028) 10.4% T (PEAK HOUR) T (AVERAGE DAY) 1,200 FUNCTIONAL CLASSIFICATION URBAN PRINCIPAL ARTERIAL

APRIL 23, 2013

100% SUBMISSION

ENGINEERS

FAY, SPOFFORD & THORNDIKE

5 BURLINGTON WOODS BURLINGTON, MA 01803



RECOMMENDED FOR APPROVAL

DATE

DATE

CHIEF ENGINEER

APPROVED

APPROVED:

DIVISION ADMINISTRATOR

DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

DIVISION ADMINISTRATOR

[Michal_J] - April 23, 2013 - 9:25am - T:\QA-013 Mass Ave_Arlington\Drawings\QA-013_Title.dwg [001 - Title Sheet and Index]

FS&T DWG. NO.

QA-013

ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS		
MASS.		2	177		
PPO IECT EILE NO 604687					

GENERAL NOTES

SURVEY NOTES

BASEMAPPING PROVIDED BY SURVEY AND MAPPING CONSULTANTS (SMC), 170 FORBES ROAD, SUITE 207, BRAINTREE, MA 02184.

- 1. THIS PLAN IS BASED ON RECORD DESCRIPTIONS, ADDITIONAL REFERENCES, OTHER SOURCES, AND AN ON-THE-GROUND, INSTRUMENT SURVEY MADE SEPTEMBER DECEMBER, 2008.
- 2. COORDINATES, IN U.S. SURVEY FEET, ARE IN THE MASSACHUSETTS COORDINATE SYSTEM, MAINLAND ZONE, CORS ADJUSTMENT (NAD 83/CORS), AS DETERMINED BY SMC'S PROJECT NETWORK OF G.P.S. OBSERVATIONS AND TOTAL STATION TRAVERSING; THIS NETWORK IS BASED UPON THE KEY NET GPS VIRTUAL REFERENCE STATION SYSTEM, OBSERVED SEPTEMBER 29, 2008, AT STATIONS 1-5 SHOWN HEREON.
- GRID TICKS ARE SHOWN AT 200 FT. INTERVALS.
- 3. ELEVATIONS, IN U.S. SURVEY FEET, ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), AS DETERMINED BY SMC'S PROJECT NETWORK OF G.P.S. OBSERVATIONS, TOTAL STATION TRAVERSING AND DIFFERENTIAL LEVELING;

THIS NETWORK IS BASED ON THE FOLLOWING MASSACHUSETTS GEODETIC SURVEY (MAGS) CONTROL STATIONS, THE PUBLISHED ELEVATIONS OF WHICH WERE TRANSFORMED FROM THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29) TO NAVD 88 USING CORPSCON V6.01 SOFTWARE:

STATION A 38 ~ A COPPER PLUG IN A HEADWALL FOR THE WHITTEMORE STREET RAILROAD UNDERPASS; ELEV. = 29.12 FT. (NAVD 88) = 29.93 FT. (NGVD 29).

STATION 635 ~ A MONEL RIVET IN A GRANITE CAPSTONE OF THE MASSACHUSETTS AVENUE BRIDGE OVER ALEWIFE BROOK; ELEV. = 10.48 FT. (NAVD 88) = 11.29 FT. (NGVD 29).

- 4. THE SIDELINES OF MASSACHUSETTS AVENUE AND OF THE INTERSECTING WAYS WERE RETRACED FROM THE REFERENCED PLANS AND SURVEYED MONUMENTATION.
- 5. THE LOT LINES OF PROPERTIES ABUTTING SAID WAYS WERE COMPILED FROM THE TOWN OF ARLINGTON'S DIGITAL PARCEL MAPPING, AND THEIR LOCATIONS ARE APPROXIMATE.
- 6. THE PUBLIC OR PRIVATE STATUS OF THE DEPICTED WAYS IS ACCORDING TO A LISTING PROVIDED BY THE TOWN OF ARLINGTON PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION.
- 7. PROPERTY OWNERSHIPS AND TITLE CITATIONS ARE FROM LISTINGS PROVIDED BY THE TOWN OF ARLINGTON ASSESSORS IN SEPTEMBER, 2008.
- 8. SUBSURFACE UTILITY LINES AND FEATURES, AS SHOWN HEREON, WERE COMPILED FROM FIELD EVIDENCE AND/OR AVAILABLE RECORD INFORMATION AND THEIR LOCATIONS ARE ONLY APPROXIMATE. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD.

SMC ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.

BEFORE CONSTRUCTION, THE APPROPRIATE UTILITIES MUST BE CONSULTED.

BEFORE CONSTRUCTION, ALL UTILITIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED (SEE MASSACHUSETTS GENERAL LAWS, CHAPTER 82 SECTION 40).

CALL "DIG SAFE" 1-888-DIG-SAFE. (888-344-7233).

BEFORE CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE TOWN OF ARLINGTON SEWER AND WATER DEPARTMENT. (781-316-3310)

THE CONTRACTOR SHALL BE REQUIRED TO CONTACT NATIONAL GRID WHEN ENCROACHMENT IS MADE ON THEIR LINES AND SHALL FOLLOW NECESSARY REPAIR AND NOTIFICATION REQUIREMENTS WHEN TRACER WIRES ARE BROKEN.

GENERALLY, THE LINES IN THE PUBLIC AND PRIVATE WAYS ARE SHOWN AND THE LATERAL CONNECTIONS SERVICING INDIVIDUAL USERS ARE NOT SHOWN.

THE SUFFIX (R) DENOTES SUBSURFACE UTILITIES WHICH WERE COMPILED FROM RECORD INFORMATION ONLY.

NOTE THAT INFORMATION REGARDING SUBSURFACE TELECOMMUNICATIONS LINES WHICH HAS BEEN PROVIDED BY VERIZON—NEW ENGLAND IS CONFIDENTIAL AND IS TO BE USED ONLY FOR CURRENT DESIGN RELATED TO THE DEPICTED SITE; USERS OF THIS DRAWING WHO WISH TO SHOW SAID TELECOMMUNICATIONS INFORMATION IN THEIR OWN PRODUCTS MUST OBTAIN PERMISSION TO DO SO DIRECTLY FROM VERIZON—NEW ENGLAND.

GENERAL NOTES

- 1. EXISTING GROUND SURFACES SHOWN ON PLANS, PROFILES AND CROSS SECTIONS ARE BASED UPON DATA OBTAINED BY FIELD SURVEYS.
- 2. THE LOCATIONS OF EXISTING SUBSURFACE STRUCTURES, SUCH AS SEWERS, WATER MAINS, DRAINS AND OTHER UTILITIES ARE APPROXIMATE ONLY AND THE ENGINEER DOES NOT GUARANTEE THEIR NUMBER OR LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES BEFORE EXCAVATING.
- 3. THE CONTRACTOR SHALL DIG TEST PITS AT EXISTING DRAINAGE STRUCTURES TO DETERMINE EXISTING INVERT ELEVATIONS INDICATED ON THE PLANS AS N/A (NOT AVAILABLE).
- 4. PROPOSED DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERYFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE OR UTILITY DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR REQUIRED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED.
- 5. EXISTING WATER BOXES AND CURB STOPS, FIRE ALARM, SEWER AND SURFACE DRAIN MANHOLE FRAMES AND COVERS, CATCH BASIN FRAMES AND GRATES AND OTHER CASTINGS SHALL BE ADJUSTED TO LINE AND/OR GRADE AS SHOWN ON THE PLANS AND/OR AS REQUIRED BY THE ENGINEER.
- ALL EXISTING BROKEN OR DAMAGED SERVICE BOXES AND GATE BOXES WITHIN THE PROJECT SITE SHALL BE REPLACED WITH NEW STRUCTURES IN ACCORDANCE WITH THE TOWN OF ARLINGTON WATER DEPARTMENT STANDARDS AND AS REQUIRED BY THE ENGINEER.
- ALL EXISTING HYDRANTS WITHIN THE PROJECT SITE SHALL BE REPLACED WITH NEW HYDRANTS IN ACCORDANCE WITH TOWN OF ARLINGTON WATER DEPARTMENT STANDARDS AND AS REQUIRED BY THE ENGINEER. ALL OLD HYDRANTS AND MATERIALS SHALL BE DISPOSED OF BY THE CONTRACTOR.
- 8. ALL GAS GATES, ELECTRIC MANHOLES AND TELEPHONE MANHOLES WITHIN THE LIMITS OF WORK SHALL BE ADJUSTED BY THE OWNING AGENCY, UNLESS OTHERWISE INDICATED ON THE PLANS. ALL GAS, ELECTRIC, TELEPHONE AND CATV WORK SHALL BE DONE BY THE OWNING AGENCY. THE CONTRACTOR SHALL NOTIFY THE OWNING AGENCIES TO ADJUST AND/OR RELOCATE THESE STRUCTURES TO AVOID IMPACTING THE CONTRACTOR'S SCHEDULE OF OPERATIONS.
- 9. ALL PROPOSED DRAINAGE CONNECTIONS TO EXISTING STRUCTURES WILL BE INCLUDED IN THE COST OF THE NEW PIPE.
- 10. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE UTILITY COMPANIES DOING WORK IN THE SAME AREA. THE CONTRACTOR SHALL ALLOW THE UTILITY COMPANIES AND THEIR REPRESENTATIVES TO ADJUST AND/OR INSTALL THEIR SYSTEMS WITHIN TOWN/STATE OWNED STREETS AND EASEMENTS.
- 11. NO EXISTING PUBLIC UTILITY STRUCTURES SHALL BE ABANDONED AND/OR DISMANTLED WITHOUT AUTHORIZATION FROM THE ENGINEER.
- 12. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANIES WHEN THE INSTALLATION OF DRAINAGE LINES AND STRUCTURES ARE IN CLOSE PROXIMITY TO EXISTING UTILITY POLES.
- 13. THE CONTRACTOR SHALL COORDINATE WORK WITH THE OWNERS OF UTILITY POLES AND SHALL BE RESPONSIBLE FOR TRIMMING TREES AS NECESSARY TO ACCOMODATE NEW UTILITY POLE LOCATIONS.
- 14. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR TEMPORARY SUPPORT WHILE EXCAVATING IN CLOSE PROXIMITY OF UTILITY POLES, IF REQUIRED BY THE UTILITY, AT NO ADDITIONAL COST.
- 15. THE CONTRACTOR SHALL NOTIFY MBTA POWER DEPARTMENT PRIOR TO PERFORMING ANY WORK ON MBTA MANHOLES.
- 16. CURB SHALL BE FURNISHED AND SET AT LOCATIONS SHOWN ON THE PLANS AND/OR AS REQUIRED BY THE ENGINEER.
- 17. CONSTRUCT DRIVEWAYS AND WALKS AS SHOWN ON THE PLANS AN/OR AS REQUIRED BY THE ENGINEER.
- 18. EXISTING GRANITE CURB, EDGING, AND CURB CORNERS SUITABLE FOR REUSE WITHIN THE PROJECT SITE SHALL BE REMOVED AND RESET IN ACCORDANCE WITH THE PLANS AND/OR AS REQUIRED BY THE ENGINEER.

- 19. SAW CUT EXISTING BITUMINOUS CONCRETE ROADWAYS, CEMENT CONCRETE SIDEWALKS AND BITUMINOUS CONCRETE DRIVEWAYS AS SHOWN ON THE PLANS AND AT THE PROPOSED MATCH LINE.
- 20. WHERE THE NEW CONSTRUCTION COINCIDES WITH PRESENT TRAVELED WAYS...
 - THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH THE TEMPORARY TRAFFIC CONTROL PLANS AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" FOR WORK ZONES.
 - THE CONTRACTOR SHALL PERFORM HIS WORK IN A MANNER ACCEPTABLE TO THE ENGINEER SO THAT INTERFERENCE WITH AND INCONVENIENCE TO BUSINESS CONCERNS AND ABUTTERS, ON ACCOUNT OF THE CONSTRUCTION WORK, IS KEPT TO A MINIMUM.
 - THE CONTRACTOR SHALL NOT BE ALLOWED TO PARK EQUIPMENT OR STOCKPILE EQUIPMENT OR MATERIAL ON THE TRAVELED WAYS OVERNIGHT OR WHEN NOT IN USE.
 - THE CONTRACTOR SHALL MAINTAIN SAFE AND RESPONSIBLE ACCESS TO AND FROM ABUTTING PROPERTY, PRIVATE WAYS, DRIVEWAYS AND ALL ALLEYS AT ALL TIMES DURING THE CONSTRUCTION PERIOD.
- 21. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
- 22. THE CONTRACTOR SHALL DIG TEST PITS AS REQUIRED TO LOCATE EXISTING UTILITIES PRIOR TO TREE/SHRUB PLANTING. ROOTBALLS SHALL BE PLANTED A MINIMUM OF THREE (3) LATERAL FEET AWAY FROM GAS PIPES. THE CONTRACTOR SHALL REPORT ANY CONFLICTS BETWEEN TREE PITS AND EXISTING UNDERGROUND UTILITIES TO THE ENGINEER AND THE TOWN TREE WARDEN FOR RESOLUTION.
- 23. THE CONTRACTOR SHALL DIG TEST PITS TO LOCATE EXISTING UTILITIES PRIOR TO INSTALLING LIGHTPOLE FOUNDATIONS. LIGHTPOLE FOUNDATIONS SHALL BE INSTALLED A MINIMUM OF THREE (3) LATERAL FEET AWAY FROM GAS PIPES.
- 24. UNLESS OTHERWISE INDICATED ON THE PLANS OR REQUIRED BY THE ENGINEER, THE LIMIT OF WORK SHALL BE THE BACK OF EXISTING SIDEWALK. ANY DISTURBED LAWN AREAS ALONG THE BACK OF SIDEWALK SHALL BE LOAMED AND SEEDED, AS REQUIRED BY THE ENGINEER.
- 25. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- 26. ALL PROPOSED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
- 27. THE CONTRACTOR SHALL RESTORE ANY EXISTING SURFACE PAVEMENTS AND TURF WHICH IS TO REMAIN THAT IS DISTURBED BY THE PROPOSED WORK AND SHALL PATCH ALL HOLES RESULTING FROM THE REMOVAL OF FOUNDATIONS WITH MATERIALS SIMILAR TO THE EXISTING.
- 28. ALL ACCESSIBLE ROUTES, WALKWAYS, CURB CUTS, RAMPS, SIDEWALKS, DRIVEWAY OPENINGS, CLEARANCES AND SLOPE TOLERANCES SHALL CONFORM WITH THE ARCHITECTURAL ACCESS BOARD (AAB), 521 CMR AND MASSDOT CONSTRUCTION AND TRAFFIC STANDARD DRAWINGS.
- 29. ALL UTILITY COVERS WITHIN ACCESSIBLE ROUTES SHALL BE REPLACED WITH SLIP-RESISTANT COVERS.
- 30. ITEMS LABELED "REM" SHALL BE REMOVED AND DISCARDED BY CONTRACTOR.
- 31. BEFORE START OF ANY WORK ON THE SITE, PRECEEDING THE ARRIVAL OF EQUIPMENT, MATERIALS, OR VEHICLES TO THE SITE, AND PRIOR TO THE COMMENCEMENT OF ANY CLEARING ON THE SITE, THE CONTRACTOR AND ARBORIST SHALL ARRANGE A PRECONSTRUCTION TREE INVENTORY CONFERENCE ON THE SITE WITH THE ENGINEER AND REPRESENTATIVE TOWN TREE WARDENS TO IDENTIFY TREES AND SHRUBS THAT ARE TO BE PROTECTED OR REMOVED AND REVIEW APPROVED PROTECTION MEASURES. NO CLEARING OR PRUNING SHALL BE DONE WITHOUT A CLEAR UNDERSTANDING OF EXISTING CONDITIONS TO BE PRESERVED.
- 32. THE CONTRACTOR SHALL PROTECT EXISTING SURVEY MONUMENTS AND SHALL RESET ANY MONUMENTATION DISTURBED BY HIS OPERATIONS.
- 33. ALL PAVEMENT DEEMED UNSATISFACTORY BENEATH THE PROPOSED MILLING DEPTH SHALL BE REMOVED AND REPLACED TO PROVIDE A SUITABLE BASE CONDITION FOR THE NEW TOP COURSE PAVEMENT.
- 34. WHERE EXISTING SUNKEN TRENCH PAVEMENTS ARE ENCOUNTERED, THE AFFECTED AREA SHALL BE SAWCUT AND REPAIRED FOLLOWING FULL DEPTH PAVEMENT DESIGN AS SHOWN IN THE PAVEMENT NOTES ON SHEET NO. 7.

FS&T DWG. NO.

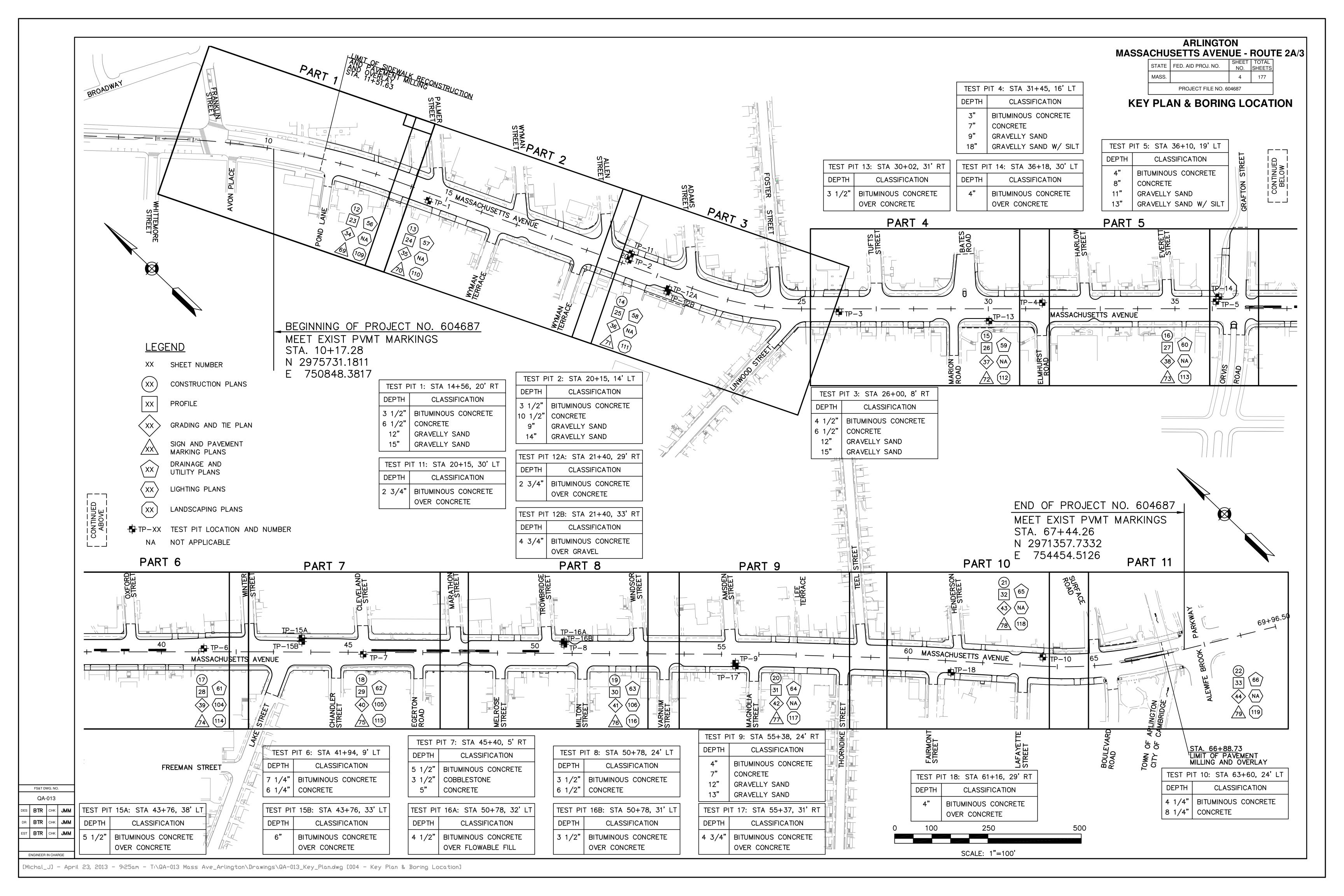
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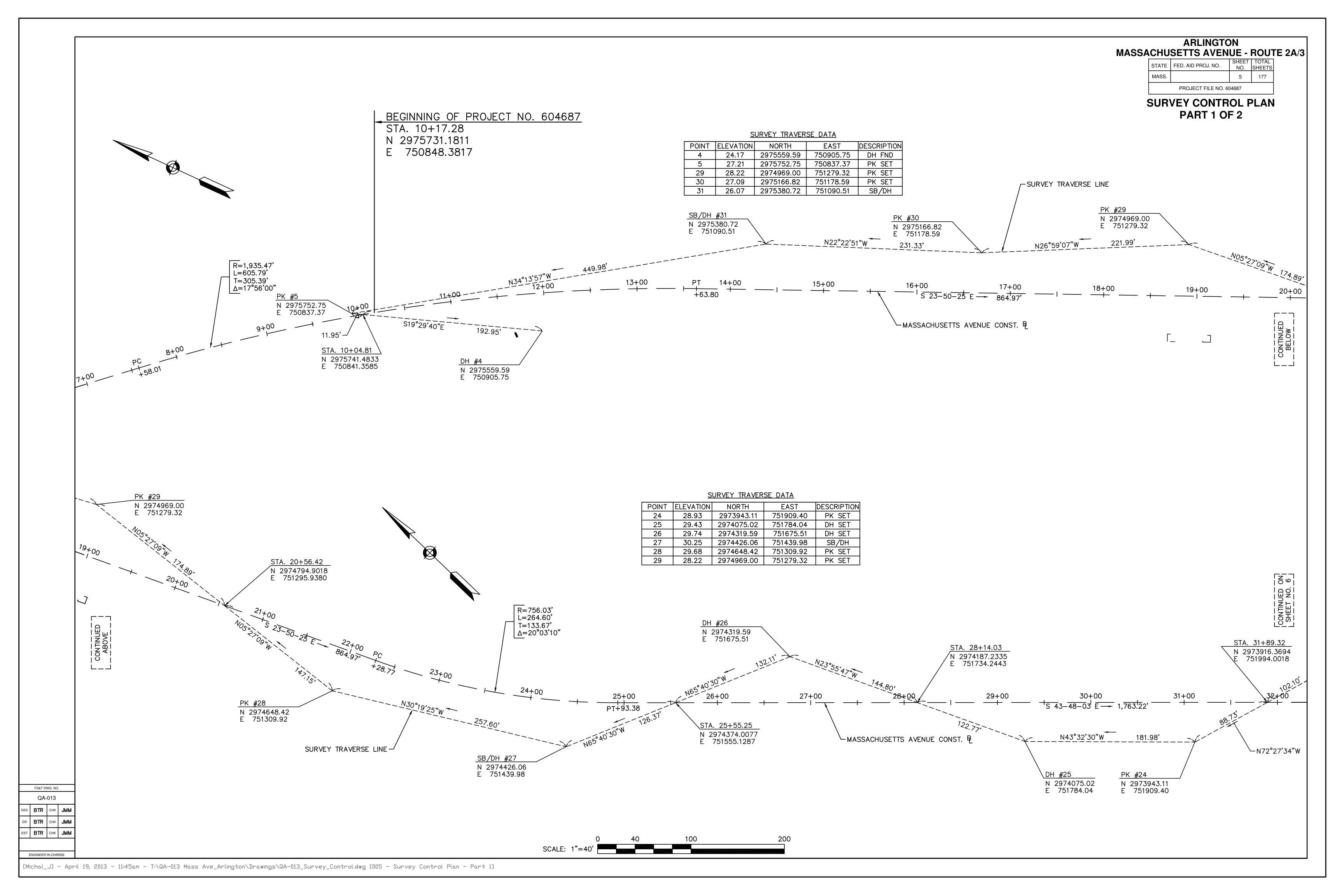
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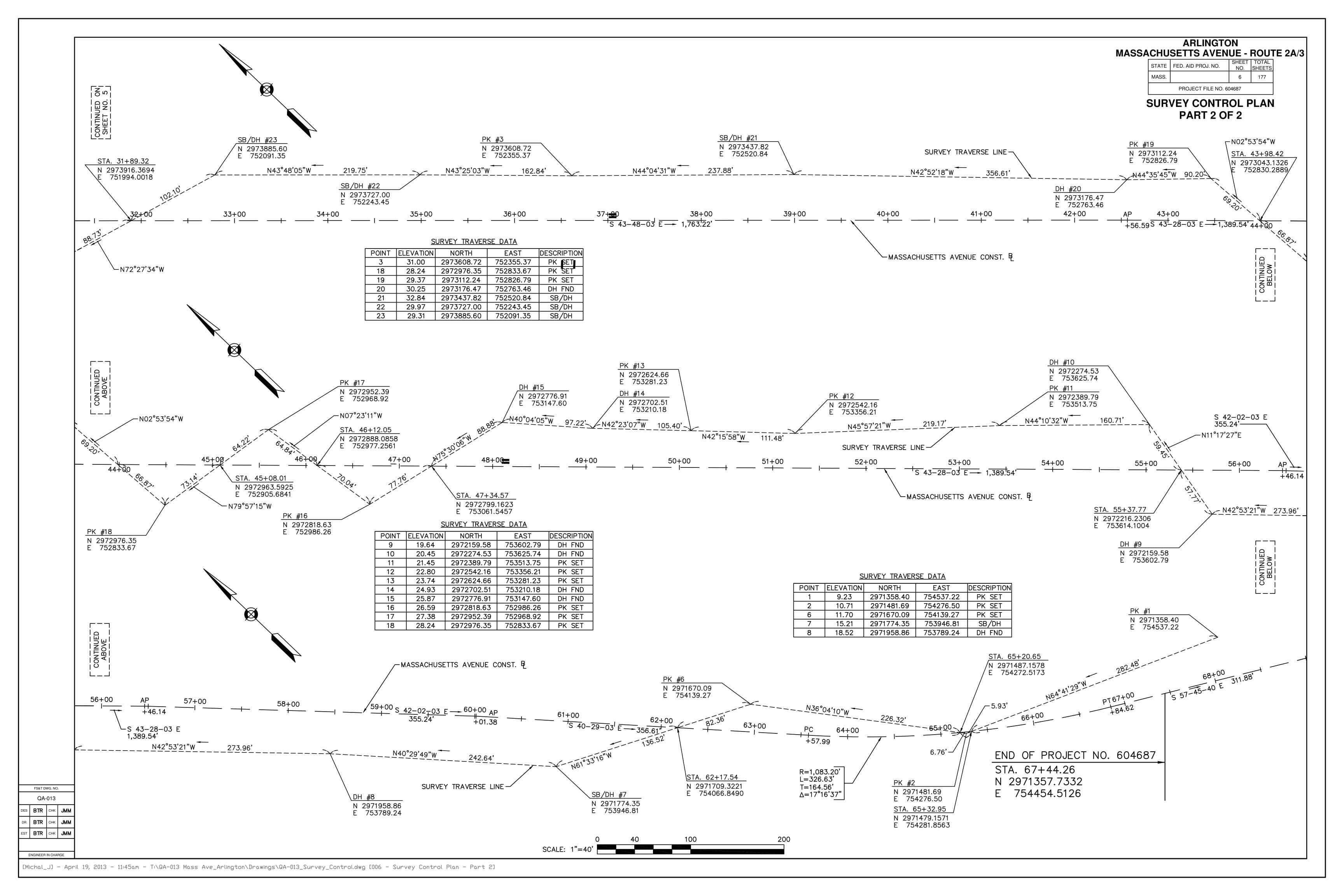
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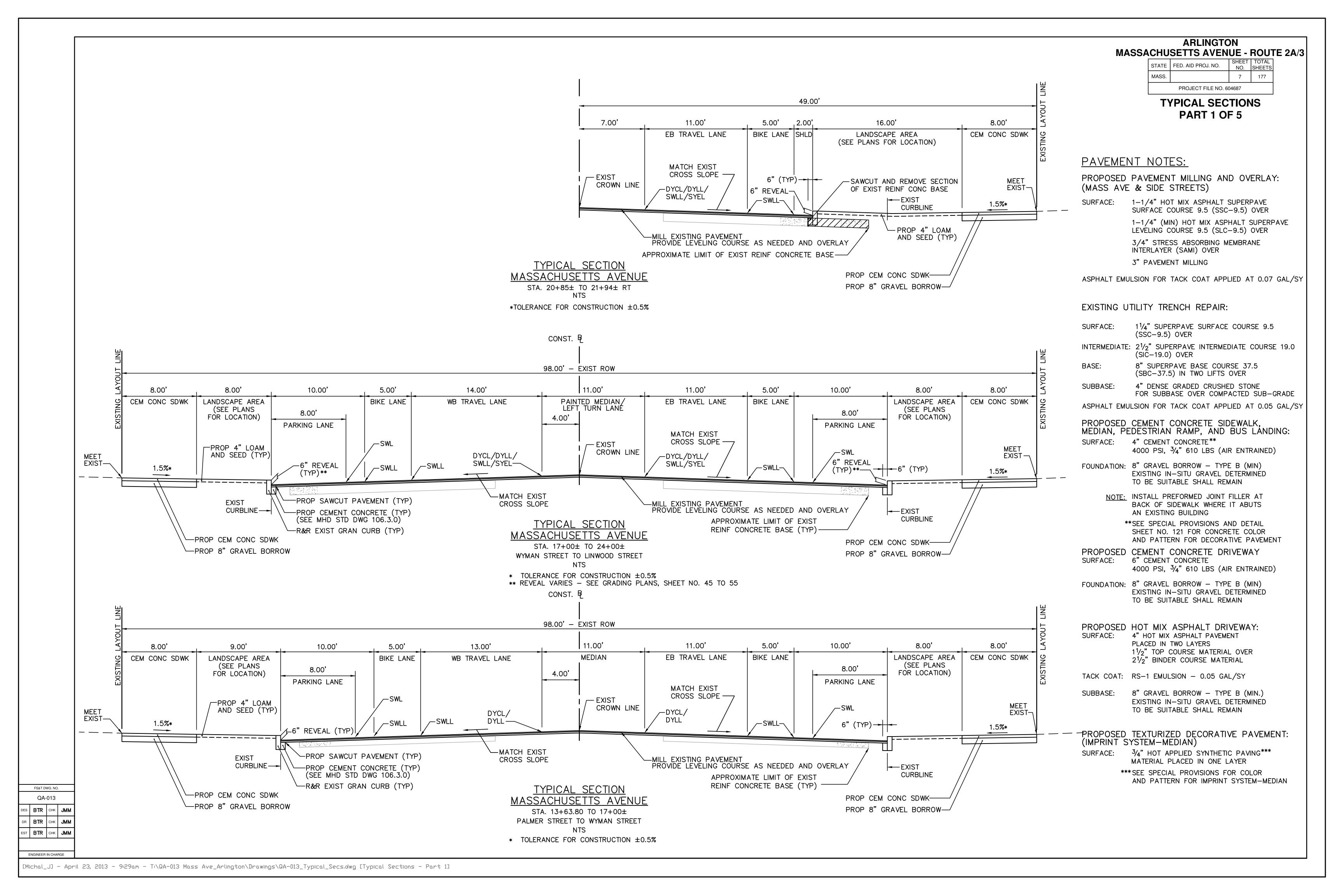
ENGINEER IN CHARGE

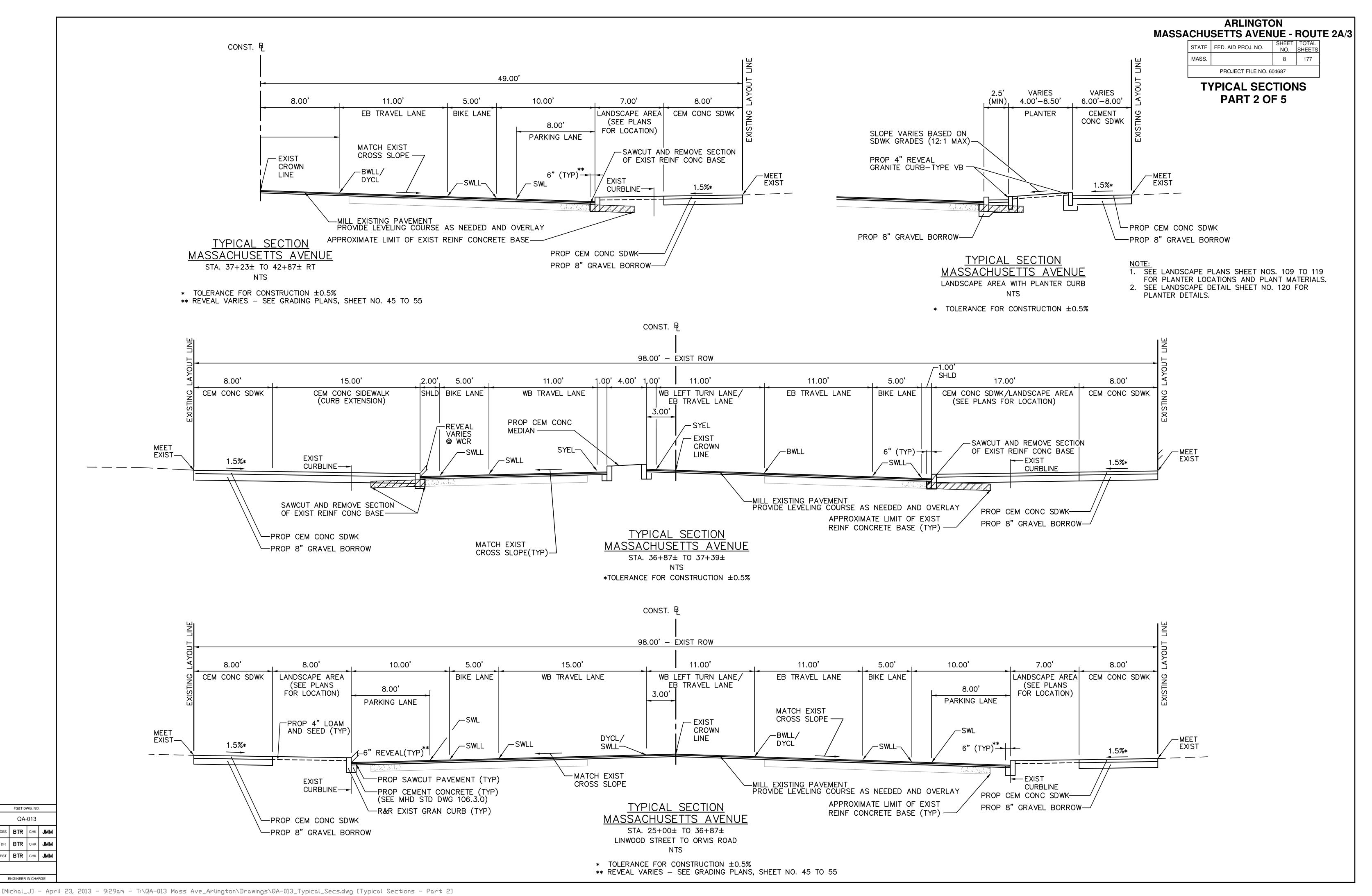
				ABBREVIATIONS					ARLINGTON
AADT	ANNUAL AVERAGE DAILY TRAFFIC	E	EXTERNAL	MH	MANHOLE	SPE	STONE FOR PIPE ENDS	MASS	SACHUSETTS AVENUE - ROUTE 2A/3
AC	ASHALTIC CONCRETE	EB	EAST BOUND	MHB	MASSACHUSETTS HIGHWAY BOUND	SRW	STONE RETAINING WALL		STATE FED. AID PROJ. NO. SHEET TOTAL NO. SHEETS
ACCM PIPE ADT	ASPHALT COATED CORRUGATED METAL PIPE AVERAGE DAILY TRAFFIC (TITLE SHEET)	ELEC ELEV (OR EL)	ELECTRICAL ELEVATION	MP MPH	METAL PIPE MILES PER HOUR	SSD ST	STOPPING SIGHT DISTANCE STREET		MASS. 3 177
AP	ANGLE POINT	EMB	EMBANKMENT	NB	NORTH BOUND	STA	STATION		PROJECT FILE NO. 604687
APPR	APPROACH	ENT	ENTRANCE	N/F	NOW OR FORMERLY	SURF	SURFACING OR SURFACE	LE	GEND AND ABBREVIATIONS
BC BD	BOTTOM OF CURB BOUND	EOP EPLP	EDGE OF PAVEMENT ESCUTCHEON PIN IN LEAD PLUG	NIC OHW	NOT IN CONTRACT OVERHEAD WIRE	SW	SIDEWALK TANGENT DISTANCE OF CURVE/TRUCK		
BIT CONC	BITUMINOUS CONCRETE	ESMT	EASEMENT	PB	OVERTICAD WINE	·	PERCENTAGE (TITLE SHEET)		
B	BASELINE	EXC	EXCAVATION	PC	POINT OF CURVATURE	TAN	TANGENT		
BLDG	BUILDING	EXIST (OR EX)		PCC	POINT OF COMPOUND CURVATURE	TBM	TEMPORARY BENCHMARK		
BLSF BM	BORDERING LAND SUBJECT TO FLOODING BENCH MARK	FAS FB	FEDERAL—AID SECONDARY FIRE BOX	PERM PI	PERMANENT POINT OF INTERSECTION	TCC	TOP OF CURB TRAFFIC CONTROL CABINET	IFGFND - PRO	OPOSED PLAN SYMBOLS
BMA	BITUMINOUS MACADAM	FL (OR FL)	FLOW LINE	PK	CONCRETE NAIL	TEL	TELEPHONE		<u> </u>
BO	BY OTHERS	FLDSTN	FIELDSTONE		E) PROPERTY LINE	TEMP	TEMPORARY		
BR BRW	BRIDGE BRICK RETAINING WALL	FND GAR	FOUNDATION GARAGE	POC POT	POINT ON CURVE POINT ON TANGENT	TLO	TOWN LAYOUT LINE TURNING POINT	()	PROPOSED TREE TRUNK PROTECTION
BS	BRICK RETAINING WALL BRICK STEPS	GBM	GRANITE BLOCK MONUMENT	PRC	POINT ON TANGENT POINT OF REVERSE CURVATURE	TPB	TRAFFIC PULL BOX		
BSW	BACK OF SIDEWALK	GC	GRANITE CURB	PROJ	PROJECT	TR	TOP OF RAIL	\bigcirc	
BV	BUTTERFLY VALVE	GD	GROUND	PROP	PROPOSED	TR SIG	TRAFFIC SIGNAL	\bigotimes	TREE TO BE REMOVED
BW	BARBED WIRE COMMUNICATION	GG	GAS GATE GUTTER INLET	PT PVGC	POINT OF TANGENCY POINT OF VERTICAL GRADE CHANGE	TRANS TSC	TRANSITION TRAFFIC SIGNAL CONDUIT	LENGTH, SIZE &	
CB	CATCH BASIN	GIP	GALVANIZED IRON PIPE	PVI	POINT OF VERTICAL INTERSECTION	TYP	TYPICAL	TYPE OF MATERIAL	PROPOSED DRAINAGE
CBCI	CATCH BASIN WITH CURB INLET	GR	GUARD RAIL	PVMT	PAVEMENT	UB	UTILITY BOX	DRAIN PIPE	PROPOSED DRAINAGE
CCM	CEMENT CONCRETE MASONRY	GRAN	GRANITE ORANIEL	PVC	POINT OF VERTICAL CURVATURE	UGUB	UNDERGROUND UTILITY BOX	LENGTH, SIZE & TYPE OF MATERIAL	
CEM CHH	CEMENT COMMUNICATION HANDHOLE	GRAV GRD	GRAVEL GUARD	PVT PWW	POINT OF VERTICAL TANGENCY PAVED WATERWAY	UP V	UTILITY POLE SPEED (USUALLY DESIGN SPEED)	WATER PIPE	PROPOSED WATER MAIN
CI	CURB INLET	GS	GRANITE STEPS	PY	POLYETHELENE	v VAR	VARIABLE		
CIP	CAST IRON PIPE	GV	GATE VALVE	R	RADIUS OF CURVATURE	VC	VERTICAL CURVE	LENGTH, SIZE & TYPE OF MATERIAL	
Ç O OONST	CENTER LINE	HDR	HEADER, CULVERT ENDWALL, DR HE	· /	RECORD	VCP	VITRIFIED CLAY PIPE	SEWER PIPE	PROPOSED SEWER MAIN
ହ୍ଲି CONST	CENTER LINE OF CONSTRUCTION CLASS (CONCRETE, EXCAVATION, ETC.)	HDW HES	HEADWALL HIGH EARLY STRENGTH (CONCRETE)	RC RCP	REINFORCED CONCRETE REINFORCED CONCRETE PIPE	VERT w./	VERTICAL WITH		
CLF	CHAINLINK FENCE	HI	HEIGHT OF INSTRUMENT	RD	ROAD	WB	WEST BOUND	- 	PROPOSED HAY BALES AND SILT FENCE
CMP	CORRUGATED METAL PIPE	HMA	HOT MIX ASPHALT	RDWY	ROADWAY	WCR	WHEELCHAIR RAMP	LENGTH, TR. SIG. COND.	TRAFFIC SIGNAL CONDUIT
CO	COUNTY	HO	HOUSE	RDWY	ROADWAY	WD	WOOD		
COBD CONC	COUNTY BOUND CONCRETE	HOR HWY GD	HORIZONTAL HIGHWAY GUARD	REINF RR	REINFORCED RAILROAD	WF WG	WOOD FENCE WATER GATE	\otimes	MANHOLE-ABANDON
CONST	CONSTRUCT(ION)	HYD	HYDRANT	RT	RIGHT	WIP	WROUGHT IRON PIPE		MANHOLE-ADJUST TO FINISHED GRADE
CP	CONCRETE PIPE	IP	IRON PIN		LL) RETAINING WALL	WM	WATER METER/WATER MAIN	•	
CR GR	CROWN GRADE	IT	INTERSECTION OF SLOPES OR PROFI		SIGN	WRW	WOOD STERS	● MH	MANHOLE
CS CSP	CONCRETE STEPS CORRUGATED STEEL PIPE	JCT	GRADE LINES JUNCTION	SB SBD	STONE BOUND SOUTH BOUND	WS X-SECT	WOOD STEPS CROSS SECTION	СВ	CATCH BASIN
CULV	CULVERT	K	RATIO OF DHV TO ADT (DESIGN)	SD	SUBDRAIN	Α 3231			
D	DIRECTIONAL PERCENTAGE OF	L	LENGTH OF CURVE	SEC	SECTION	`		CBCI	CATCH BASIN & CURB INLET
Δ	DHV (TITLE SHEET) DELTA ANGLE	LB	LEACHING BASIN LIGHT POLE	SECTS SE	SECTIONS (END SECTIONS FOR PIPES) STOCKADE FENCE)			(SQUARE FRAME)
Δ	(CENTRAL ANGLE OF HORIZONTAL CURVE)	LT	LEFT	SH	SHEET			DI	DROP INLET
DA	DRAINAGE AREA	LVC	LENGTH OF VERTICAL CURVE	SHLD	SHOULDER			GI	GUTTER INLET
DHV	DESIGN HOURLY VOLUME	M	MIDDLE ORDINATE	SHLO	STATE HIGHWAY LAYOUT LINE				
טו DIP	DROP INLET DUCTILE IRON PIPE	MA MB	MAST ARM MAILBOX	SK SMH	SKEW SEWER MANHOLE				CATCH BASIN, ADJUST
DH	DRILL HOLE	MED	MEDIAN	SP	SIGNAL POST				TO FINISHED GRADE
DR	DRIVE		I FCFND - FYIS	STING PLAN SYMBOLS				\boxtimes	CATCH BASIN-ABANDON
_			<u>LEGEND EXIS</u>	THING I LAIN STINDOLS			DEDODOLIND WATER LINE		MASONRY DRAIN PLUG
	ROADWAY EDGES			ROCK/LEDGE	——— W	/ ——— UNL	DERGROUND WATER LINE		WATER GATE
	TYPE OF SURFACE		YNN NI N	, ==	 c	. — UND	DERGROUND GAS LINE	•	WATER GATE OR GAS GATE,
			NO. OF POLE & TYPE OF UTILITY	UTILITY POLE: TELEPHONE, PO	OWER	, - · · -			ADJUST TO FINISHED GRADE
	」とはTYPE OF WALK PAVED WALKS & DRIVES (RIGID OR FLEXIBLE)	GUY	GUY POLE	 s	S UND	DERGROUND SEWER LINE	LOCATION LINE NO ACCESS OR ACCESS	STATE HIGHWAY LAYOUT LINE
	51		0 -						
- -	TYPE OF WALK W W UNPAVED WALKS & DRIVES	GRAVEL, DIRT, ET	c.) -&-	UTILITY POLE/LIGHT POLE	C) ———— UND	DERGROUND DRAIN LINE	LOCATION LINE COUNTY OR TOWN	COUNTY OR TOWN LAYOUT LINE
<u></u>		(,,	*	LIGHT POLE	——— F	UNF	DERGROUND ELECTRIC LINE	ADJ	ADJUST
7			FL	FLOODLIGHT		5		ADJBO	ADJUST BY OTHERS
<u>&</u>	XXXX XXXXX PAVED GUTTER		DIAMETER & TYPE	TREES	 1	r ———— UND	DERGROUND TELEPHONE LINE		
_	(TYPE) CURB-EDGING CURBING, EDGING		(TO SCALE) ●	III.				ABAN	ABANDON
_				PROPERTY LINE	———ОН	W ——— OVE	ERHEAD WIRES	F&C	FRAME & COVER
-	NO. OF RAILS WOOD GUARD RAIL, STEEL	BEAM GUARD, WOOL	O OR NAME OF STATE			CBCI CAT	CH BASIN & CURB INLET	F&G	FRAME & GRATE
_	STEEL POSTS		NAME_OF_STATE NAME_OF_STATE	STATE BOUNDARY LINE				REMODEL	REMODEL
_	NO. OF CABLES GUARD RAIL, TRIANGULAR	CONCRETE POSTS			_)MH MAN	NHOLE (LABEL TYPE)	CIT	CHANGE IN TYPE
Δ	A A A A A OOARD RAIL, INTAROGEAR	CONTONETE 1 0313	CO. COMM., CITY, TOWN	COUNTY COMMISSIONER'S LINE	(LAYOUT) o N	WG WAT	ER GATE	CTE	CONNECT TO EXISTING REMOVE
r	NO. OF CABLES GUARD RAIL, STEEL POSTS		OR R.R. LAYOUT	CITY OR TOWN LAYOUT LINE RAILROAD SIDELINE		Y HYD	RANT	REM	REMOVE & DISCARD BY OTHERS
	·				·			R&DBO	REMOVE & DISCARD BY OTHERS REMOVE & DISCARD
Δ	A A A CONCRETE GUARD POSTS		NAME OF CITY, TOWN OR COUNTY NAME OF CITY, TOWN OR COUNTY	CITY, TOWN, OR COUNTY BOUI	NDARY LINE	GG GAS	S GATE	R&D R&R	REMOVE & DISCARD REMOVE & RESET
	BALANCED STONE WALL		NAME OF CITY, TOWN OR COUNTY			CB CAT	CH BASIN	R&RBO	REMOVE & RESET BY OTHERS
_	BALANCED STONE WALL		(DATE) (STATE HIGHWAY LAYOUT)	STATE HIGHWAY LAYOUT LINE		DSCB DEE	P SUMP CATCH BASIN	R&S	REMOVE & STACK
_	RETAINING WALL		(STATE THOUWAT LATOUT)	STATE MICHWAT LATUUT LINE			CHING BASIN	R&S	RETAIN
			□SB	STONE BOUND			ASTINACE BACINA	TEMP. OR PERM.(TYPE)	EASEMENT (TEMP. OR PERM.)
=	DOUBLE FACED WALL		□SBDH	STONE BOUND w/ DRILL HOLE	-	. HAN	NDHOLE	TERRIT CONTENTION (TITE)	LASLIVILIVI (ILIVIF. ON FERIVI.)
				·	- 	□ DRC	OP INLET	VV 🗥	BORING LOCATION AND NUMBER
=	POINTED WALL		■MHB	MASS. HIGHWAY BOUND	CONC	HDR con-	IODETE HEADWALL (END) FOR OUR VERTO	XX-•	DOMING LOCATION AND NUMBER
_	—× TYPE ×——×— FENCE		⊡CO.BD.	COUNTY BOUND	30.10	⇒ CON	ICRETE HEADWALL (END) FOR CULVERTS	TP-XX	TEST PIT LOCATION AND NUMBER
_	n n n reinue		TOWN OR CITY BD.	TOWN OR CITY BOUND	STONE	HDR STO	NE HEADWALL (END) FOR CULVERTS	T	
	△ NUMBER MASS. TRIANGULATION STA	TION				·	TELOUAD DAME	OR OR	WHEELCHAIR RAMP
	WOODS OR BRUSH (TREE I	INIT\	TYPE	BUILDINGS, HOUSES, ETC.		₩HE	EELCHAIR RAMP	N.	PROPOSED LIGHT POLE AND FIXTURE
	WOODS OR BRUSH (TREE L	IINC)	MATERIAL HO. NO.	DUILDINGS, MUUSES, ETC.		CAT	TCH BASIN "D SHAPE"	*	JOED LIGHT I OLL MID HATONL
	ananana HEDGE			EVICTIMO CONTOUD	#	^ A T	TOU BASIN BOLIND	FOR LANDSCAPE SYMBOLS & LEGE	ND SEE SHEET NO. xx
			99	EXISTING CONTOUR	₩	CAT	TCH BASIN ROUND	FOR TRAFFIC SYMBOLS & LEGEND	
	业 业 WETLAND		× 7.5	SPOT ELEVATION				FOR TEMPORARY TRAFFIC CONTROL	SYMBOLS & LEGEND SEE SHEET NO. 99
-									

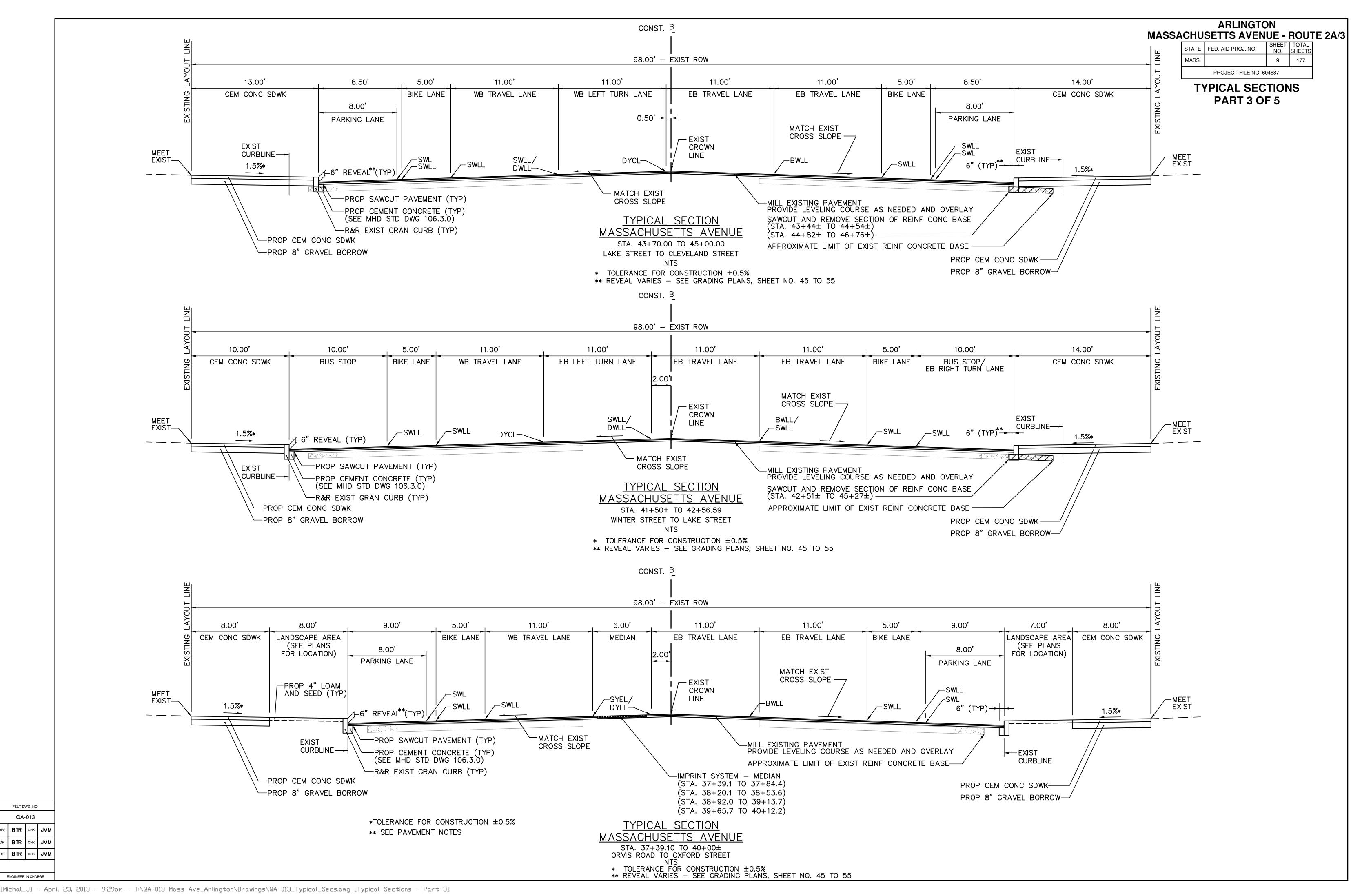


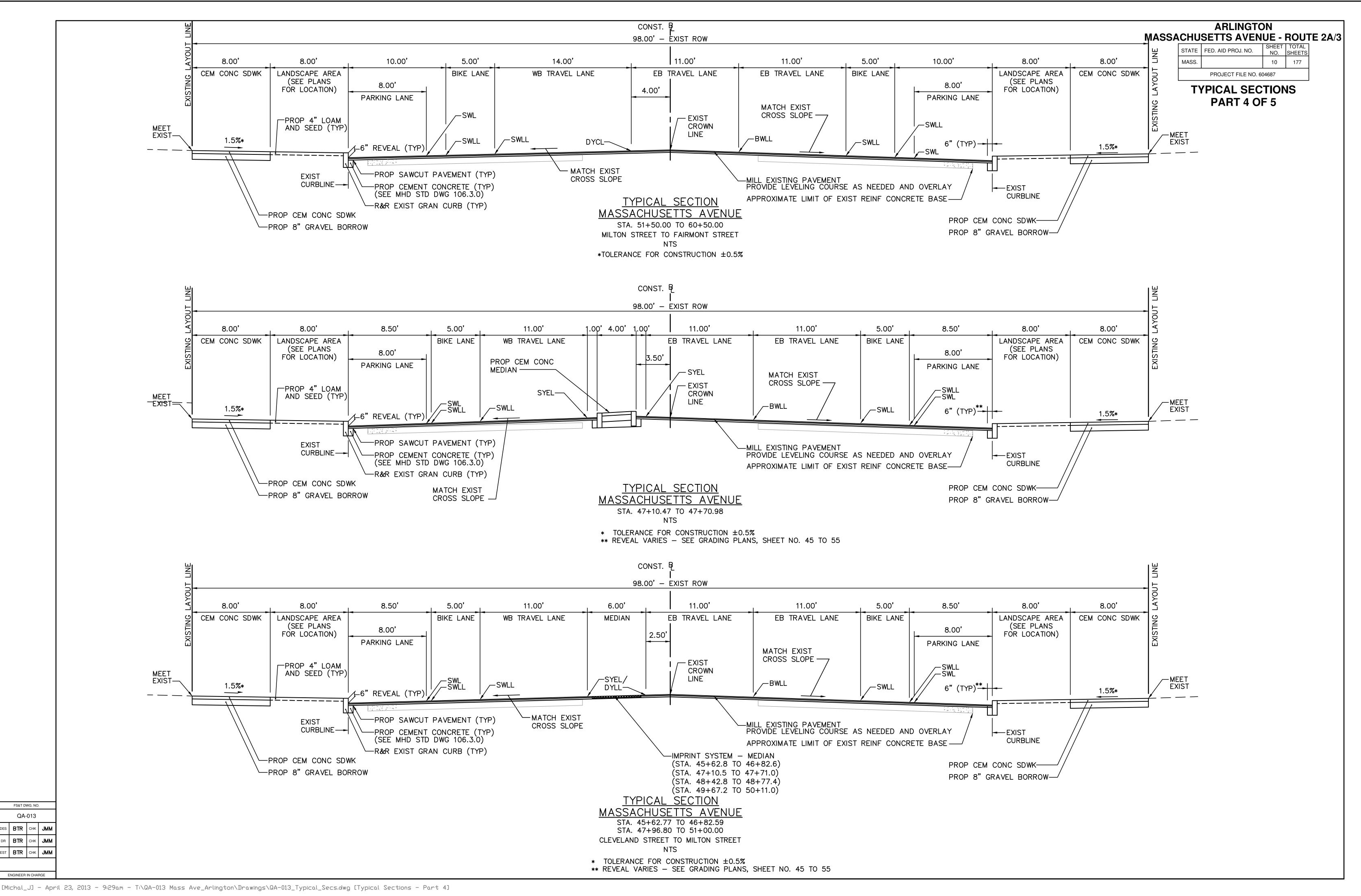


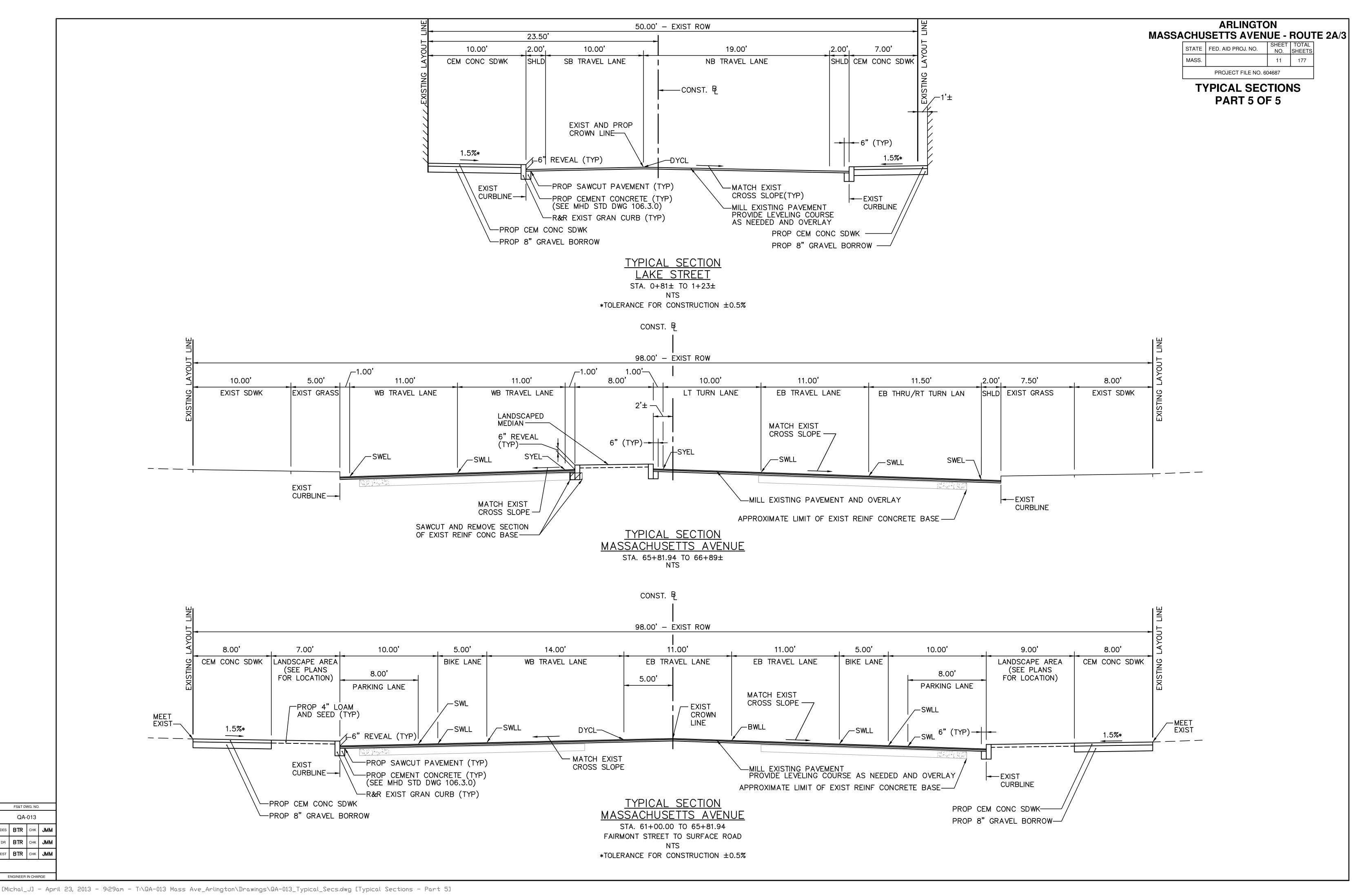


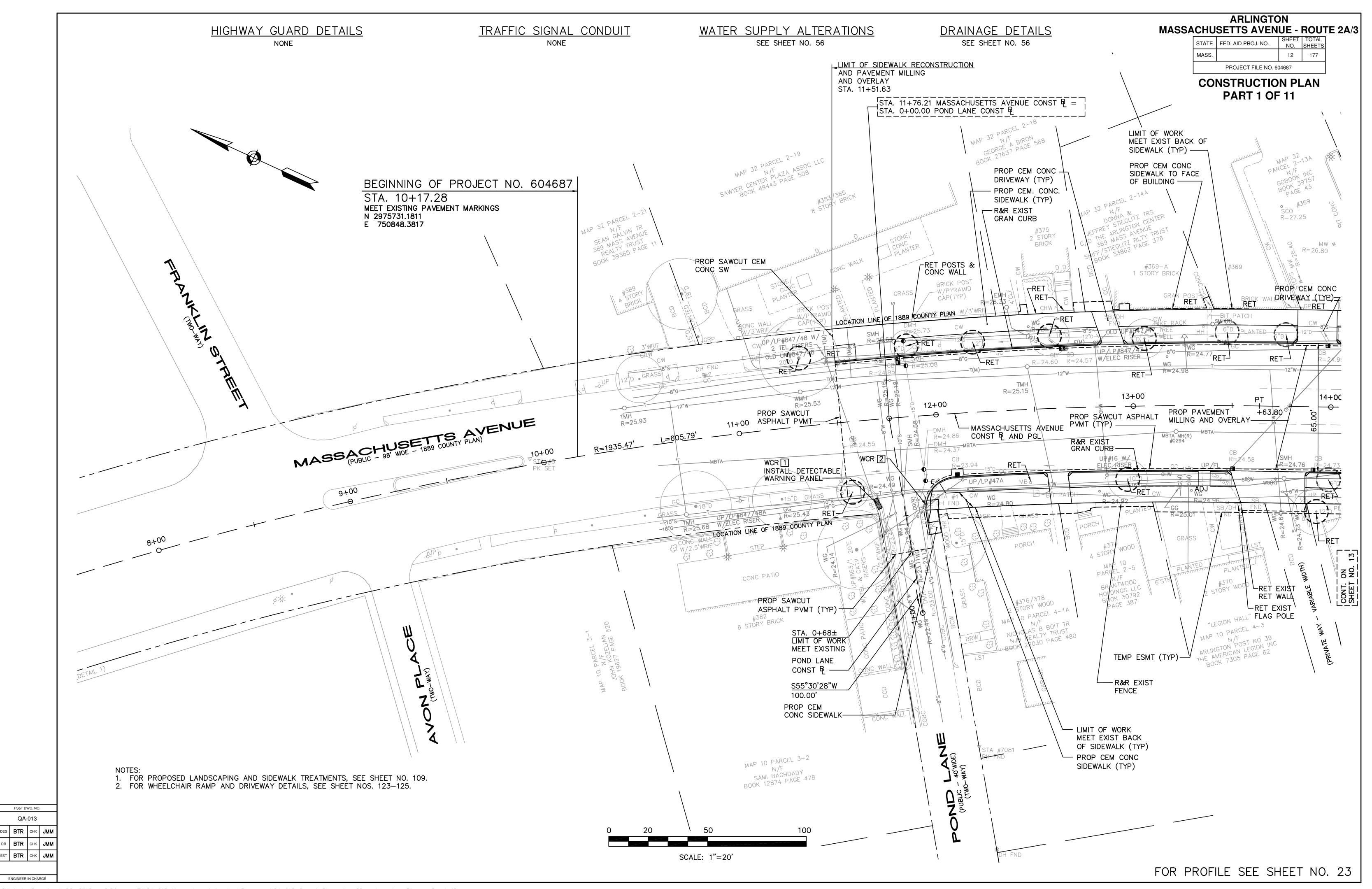


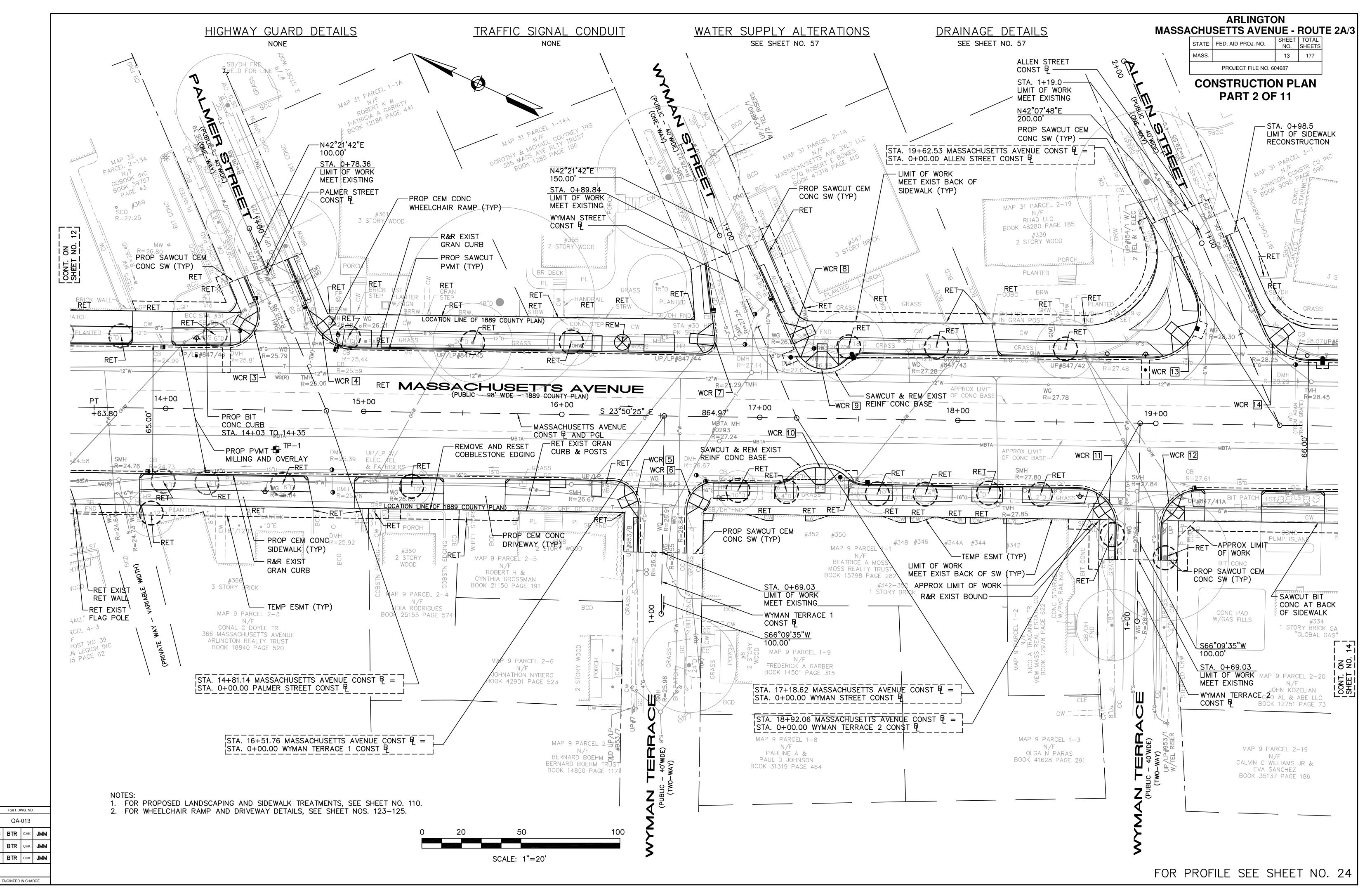


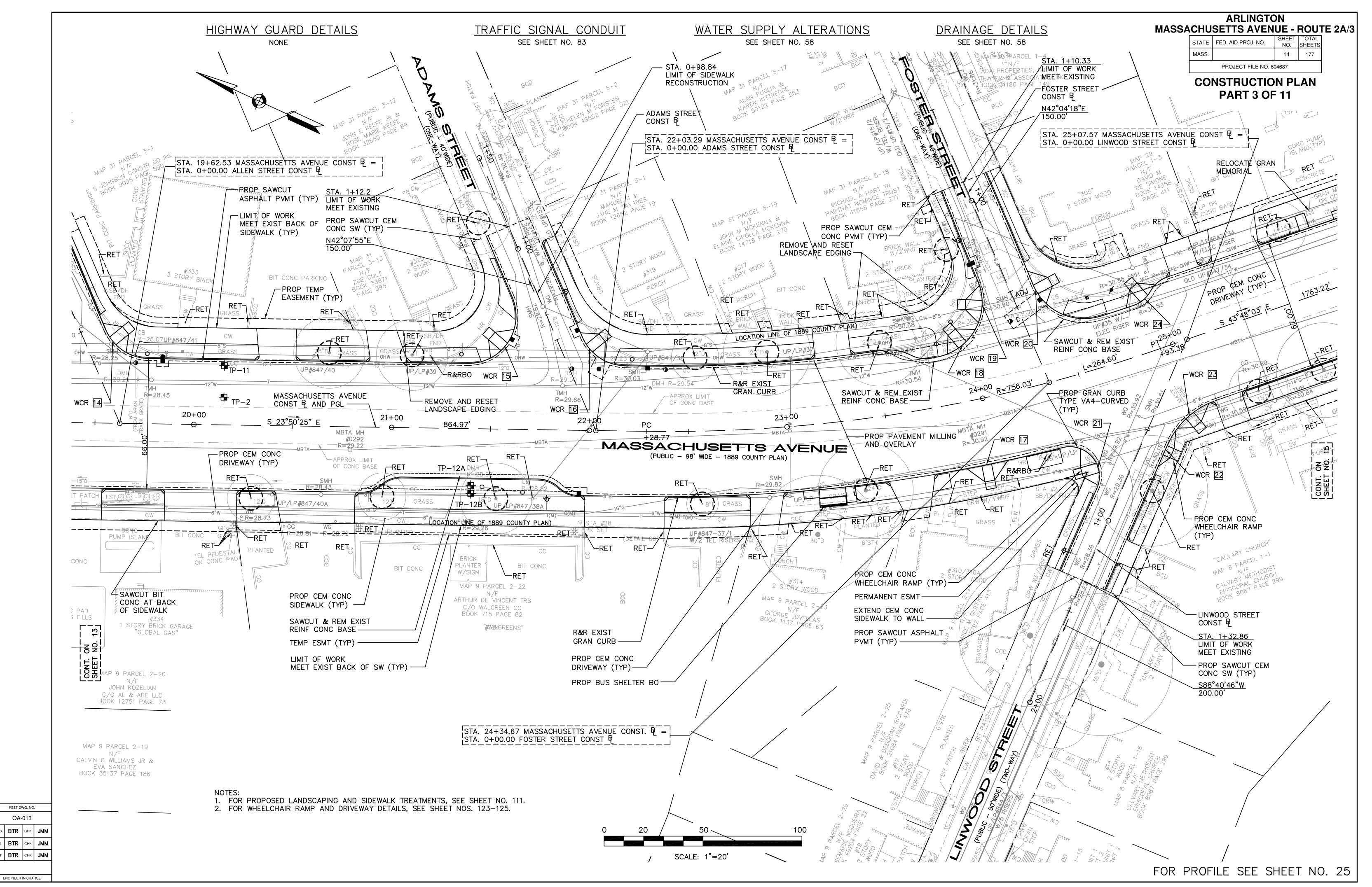


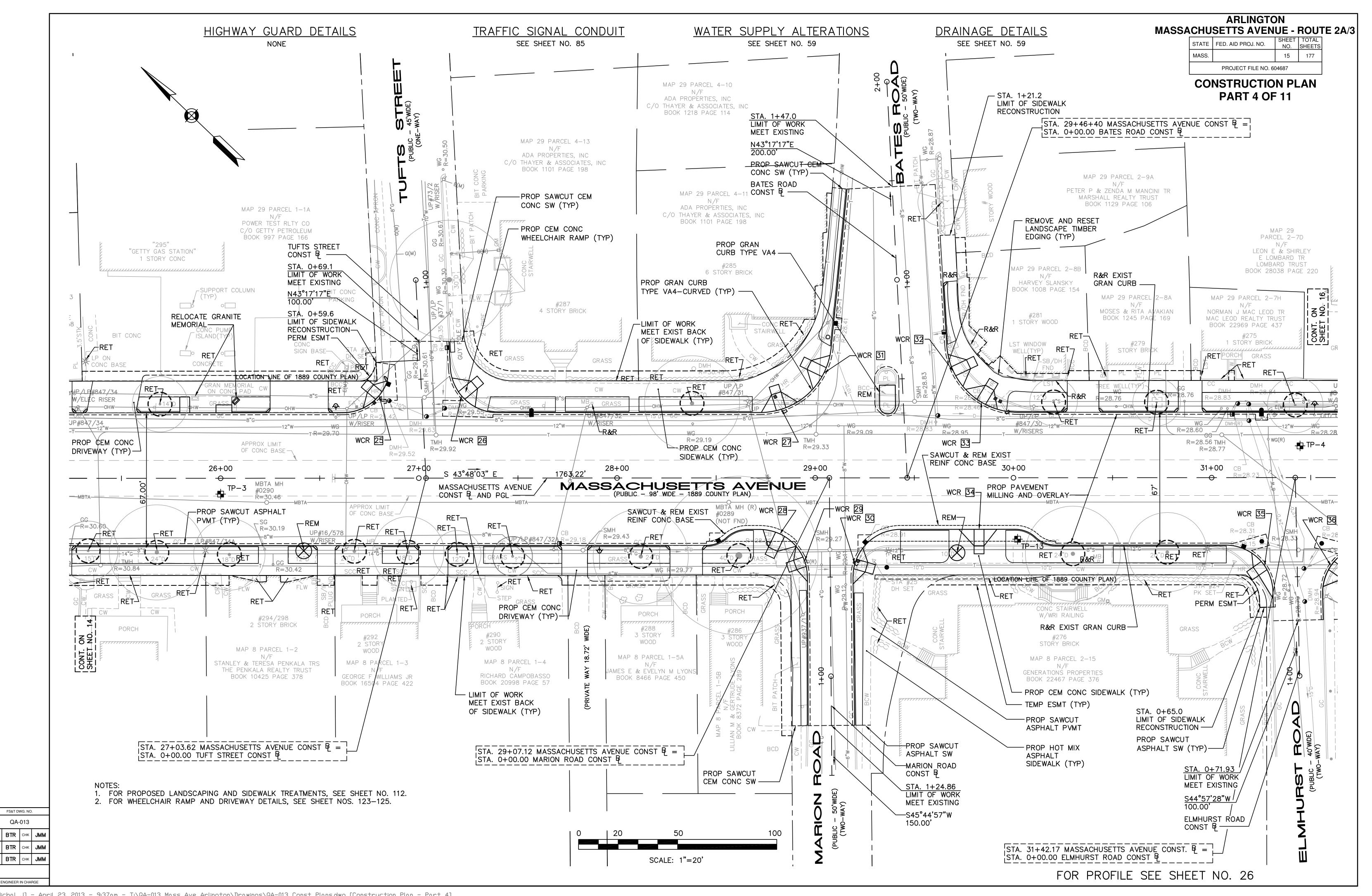


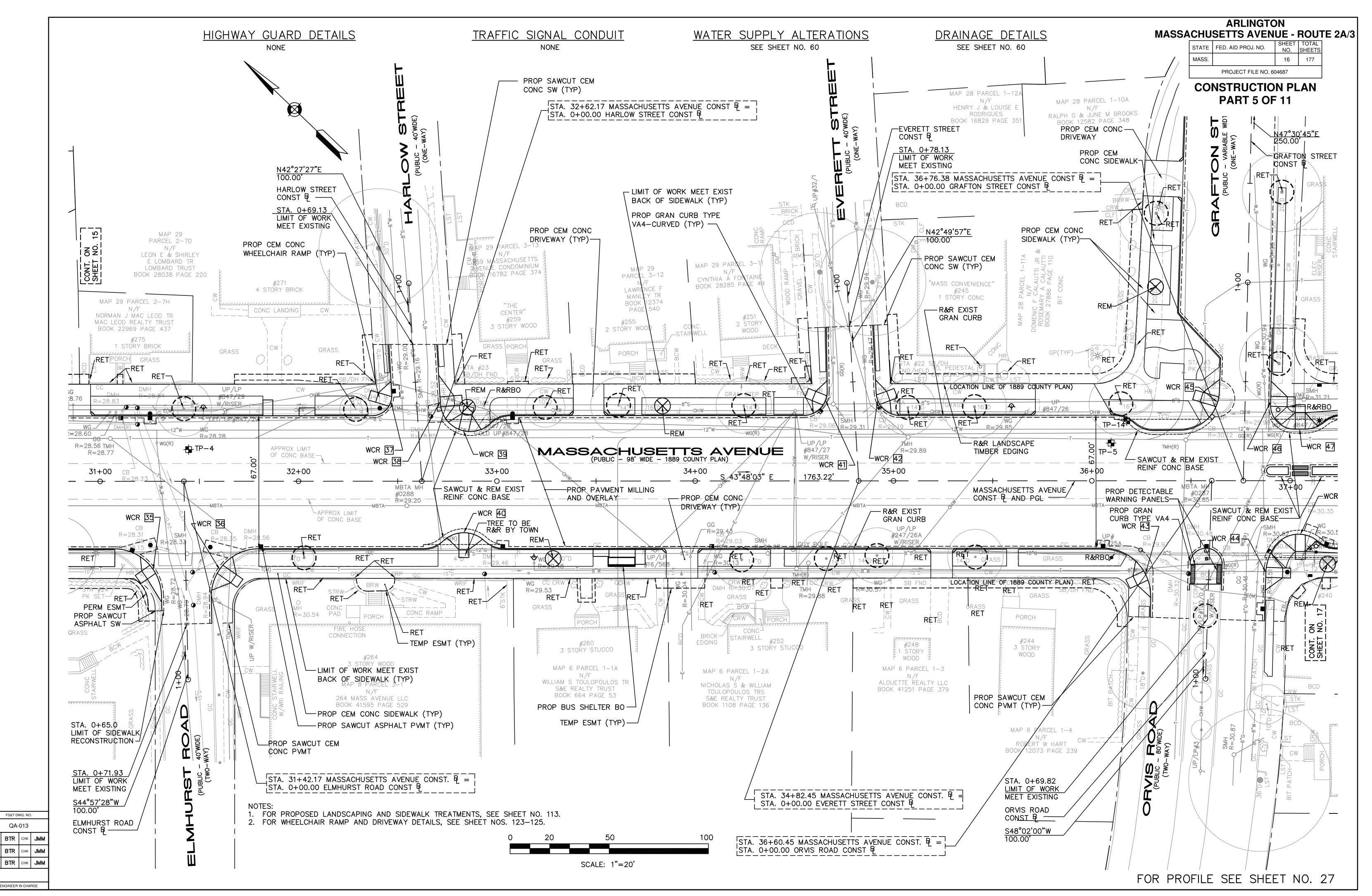


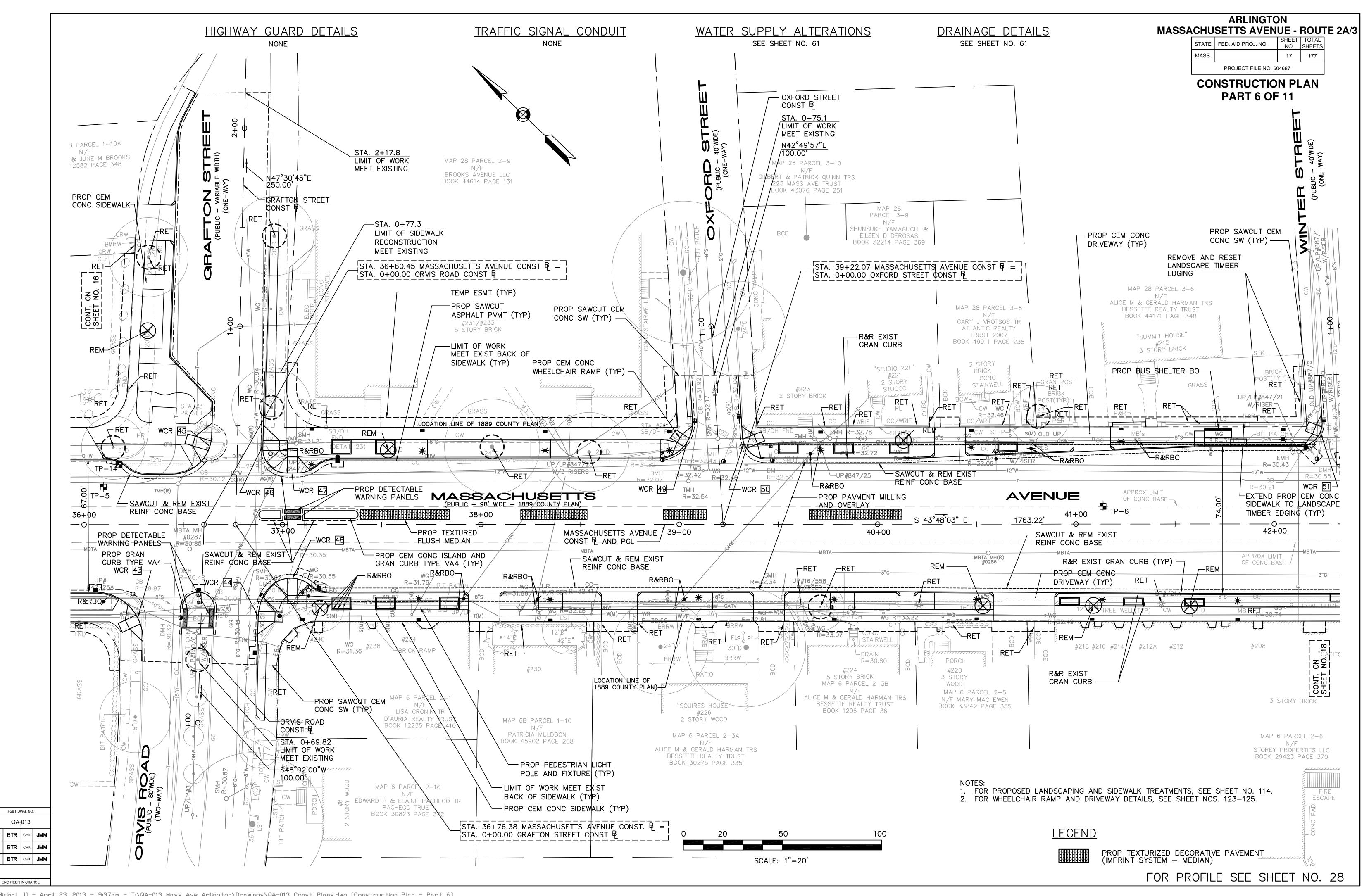


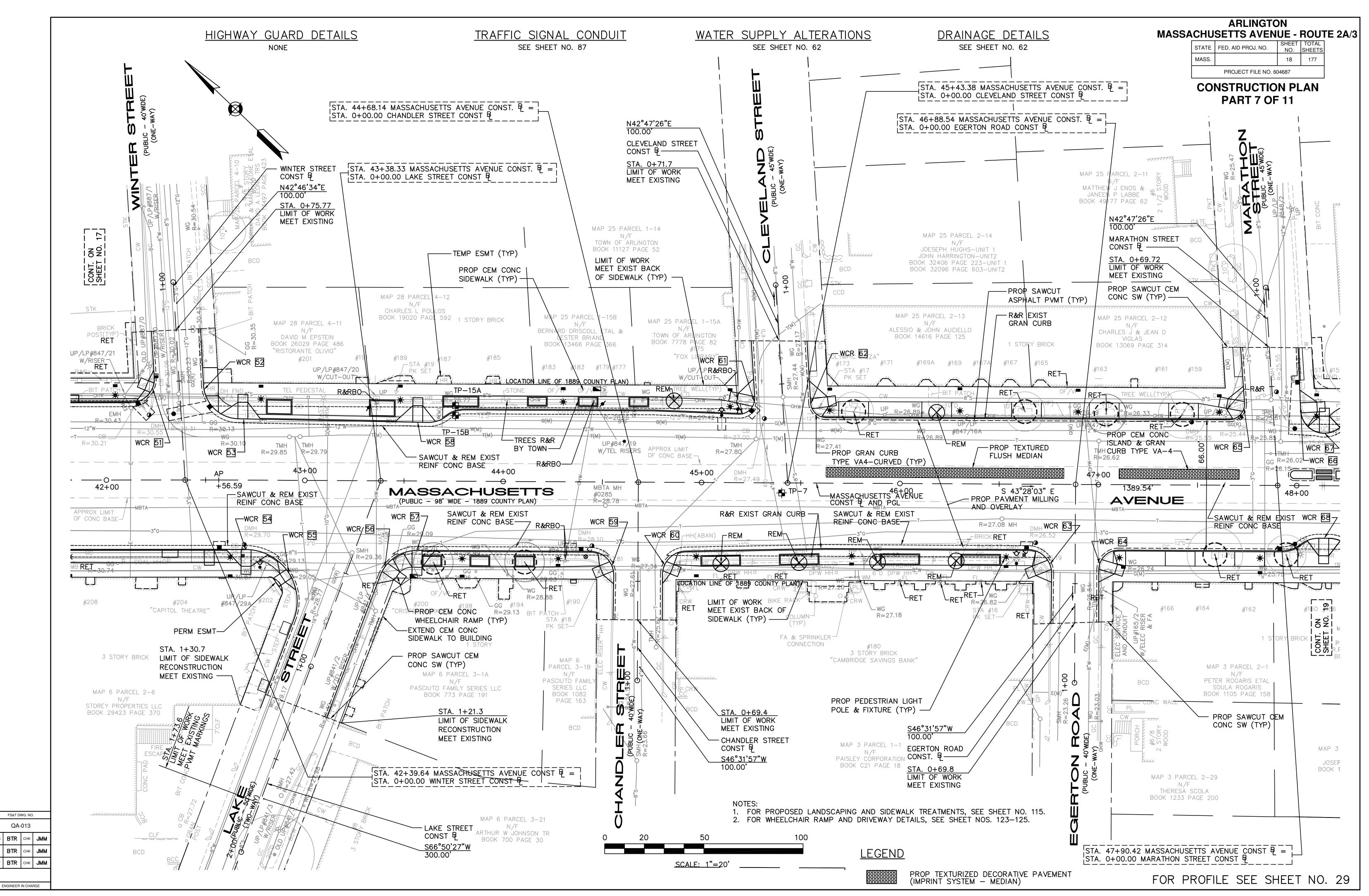


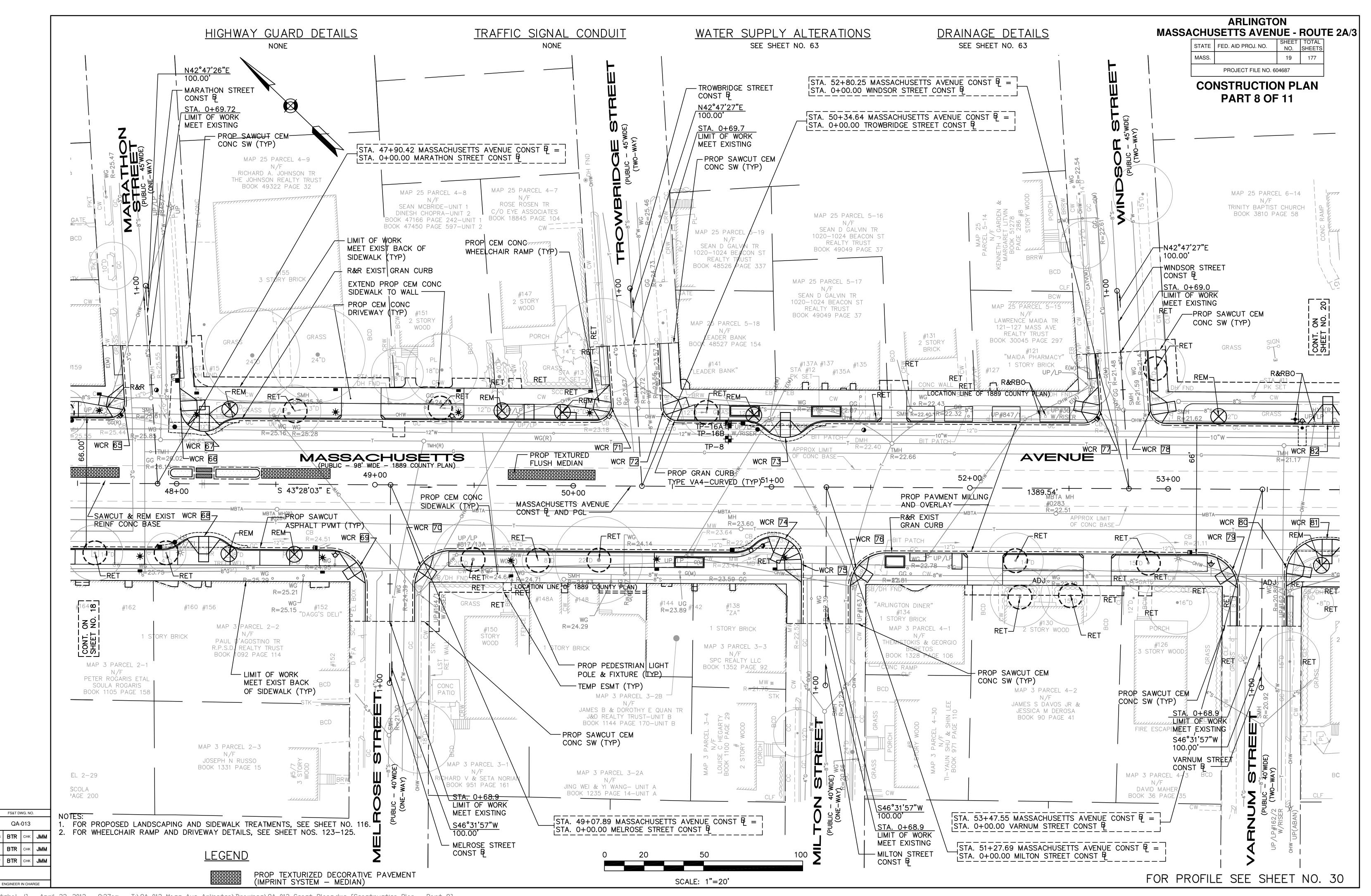


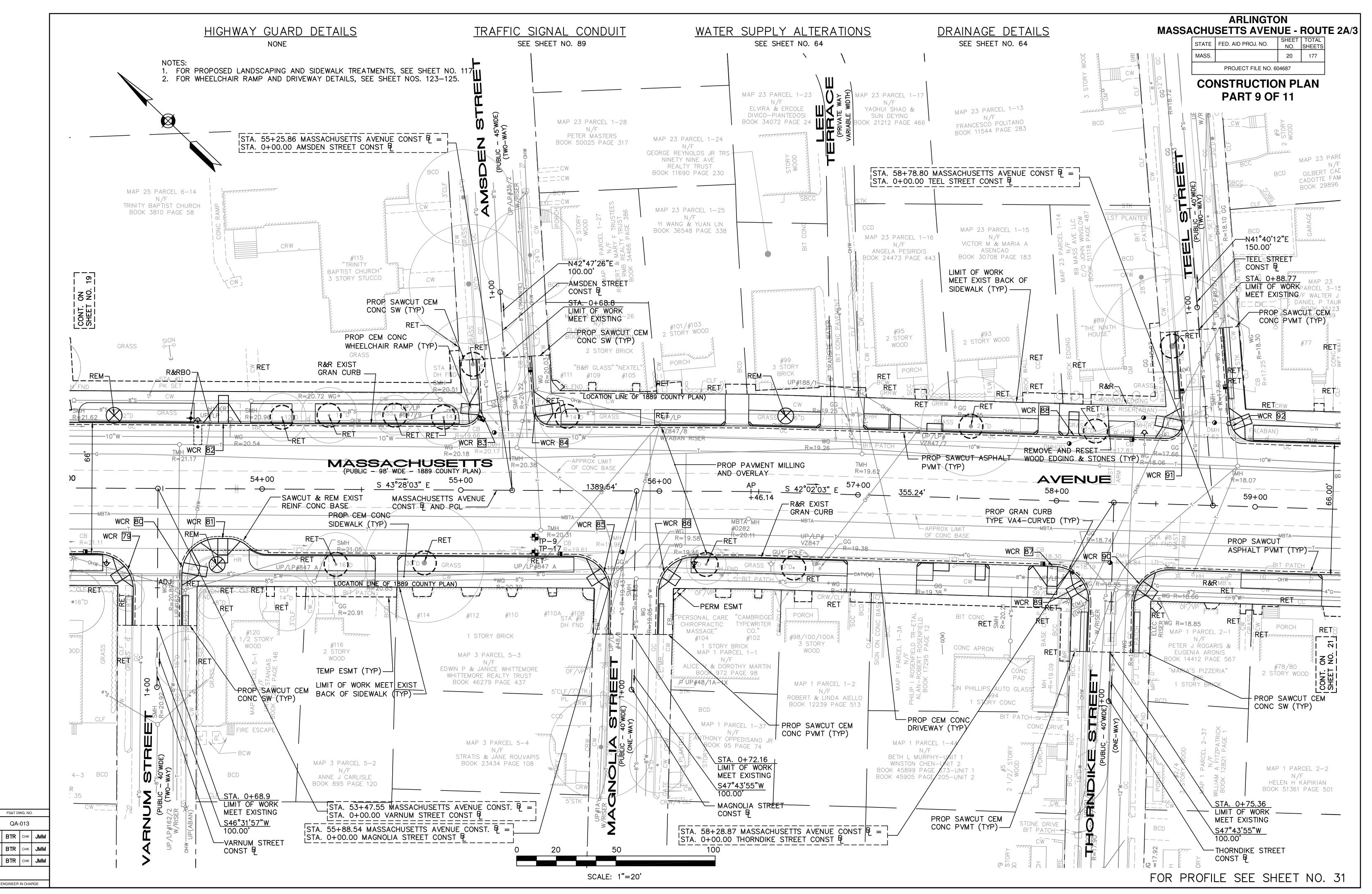


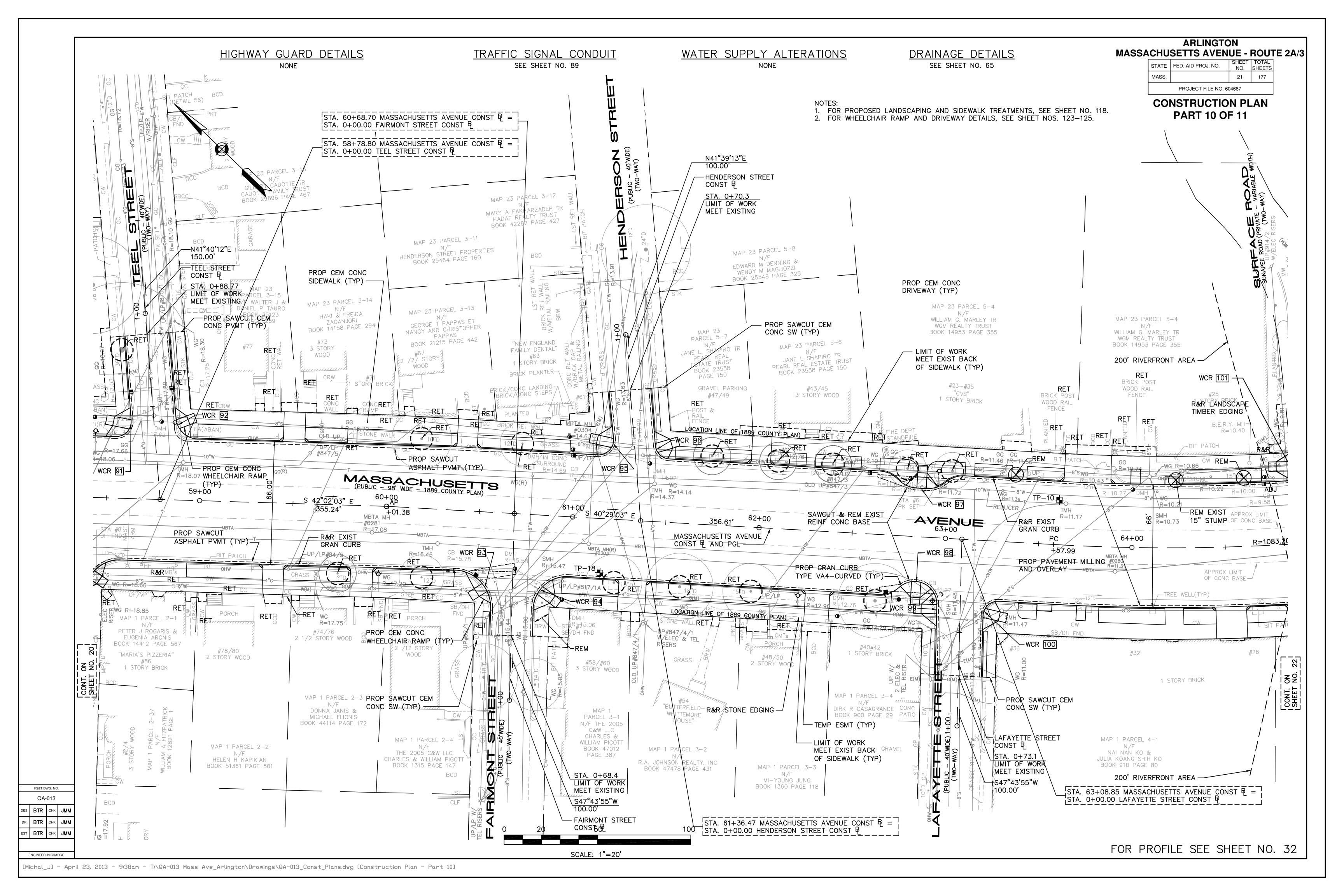


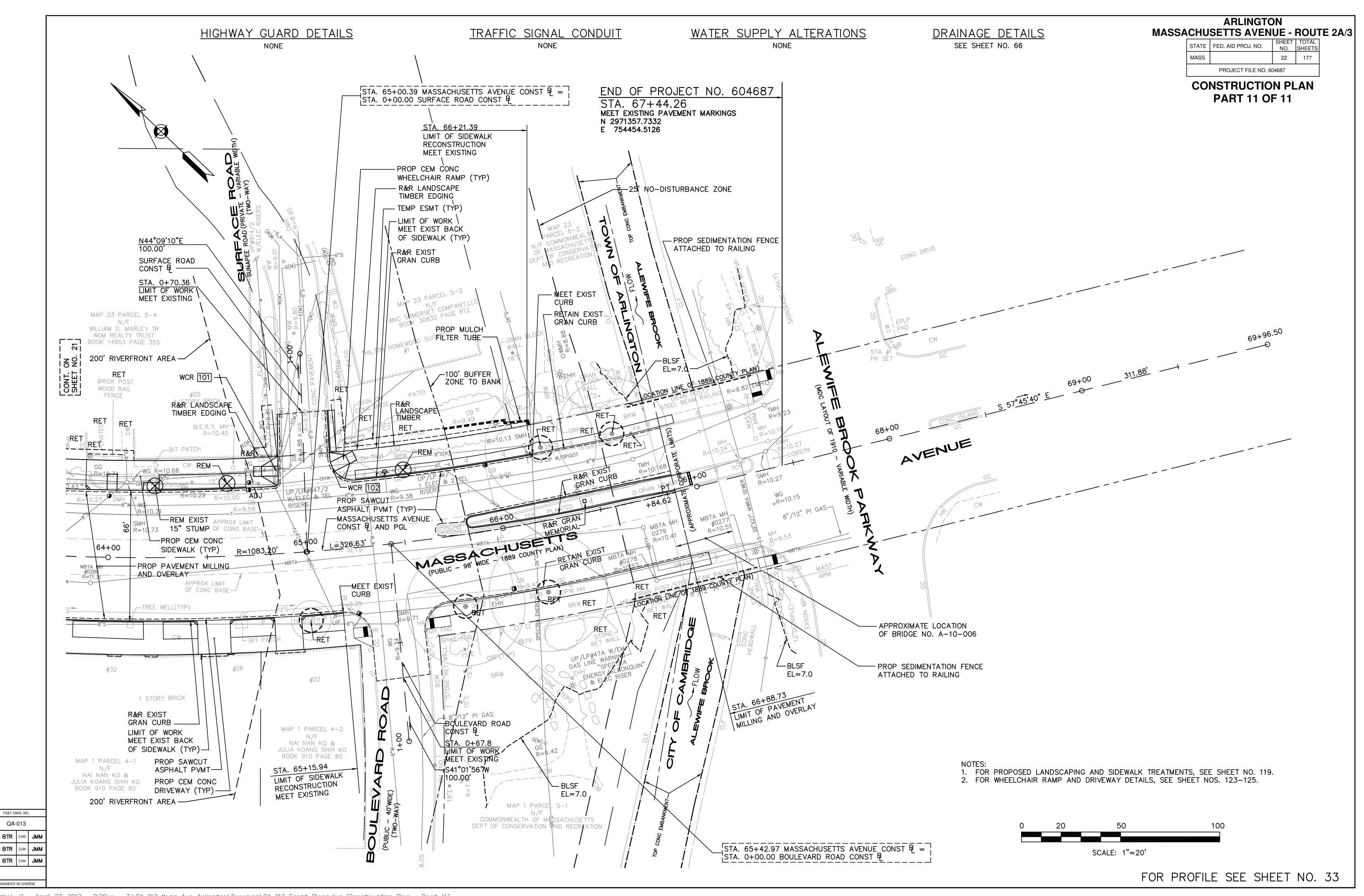


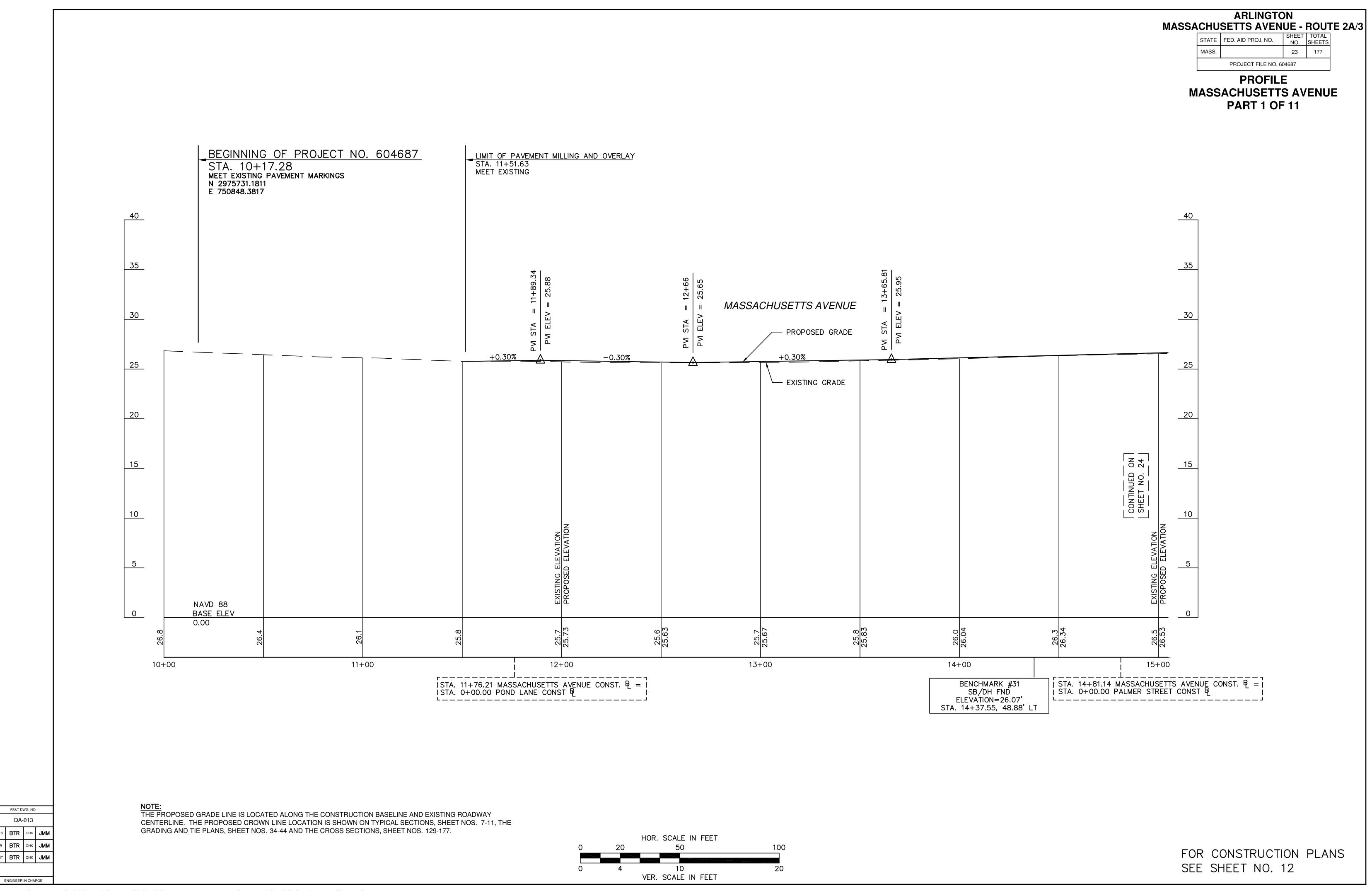






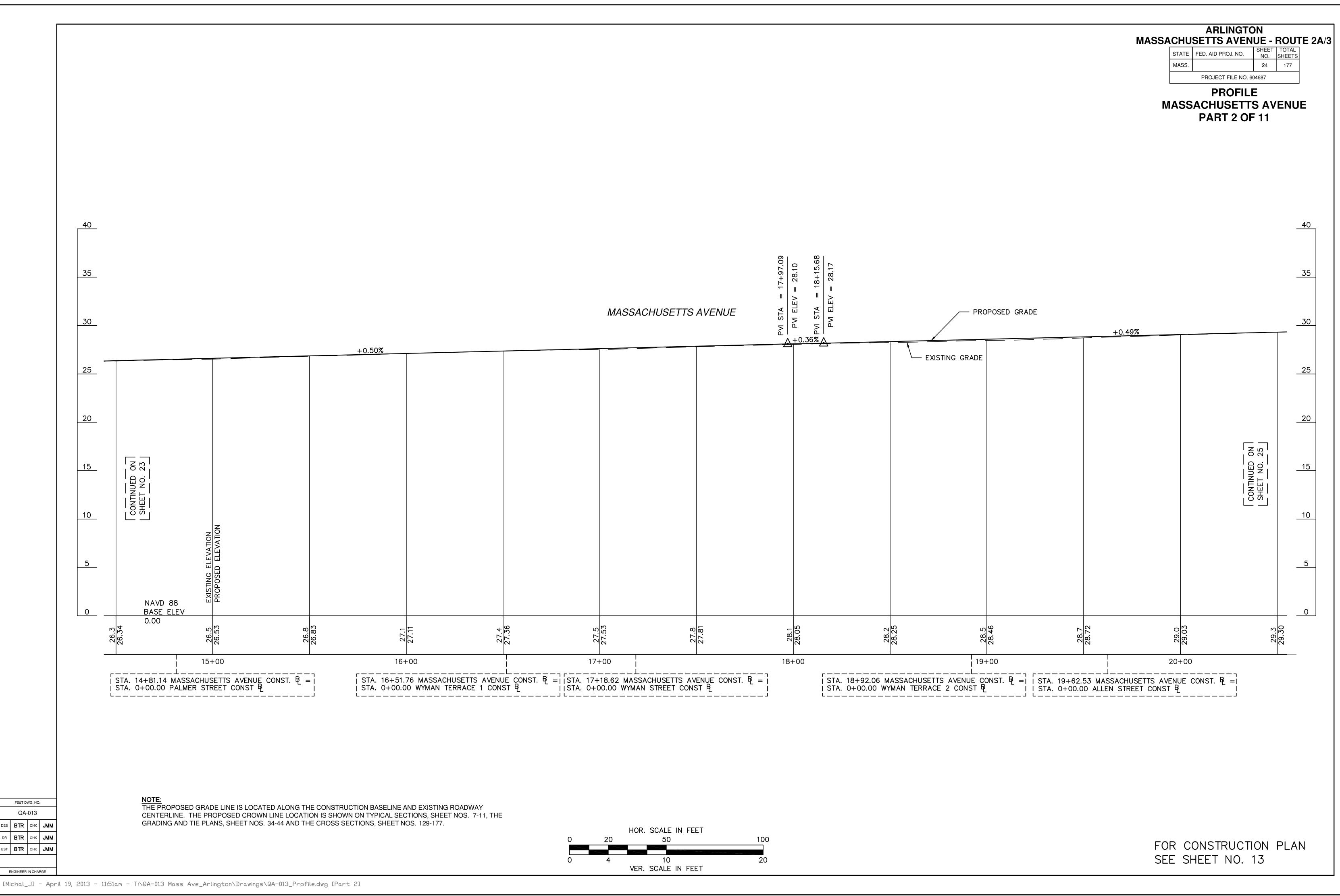


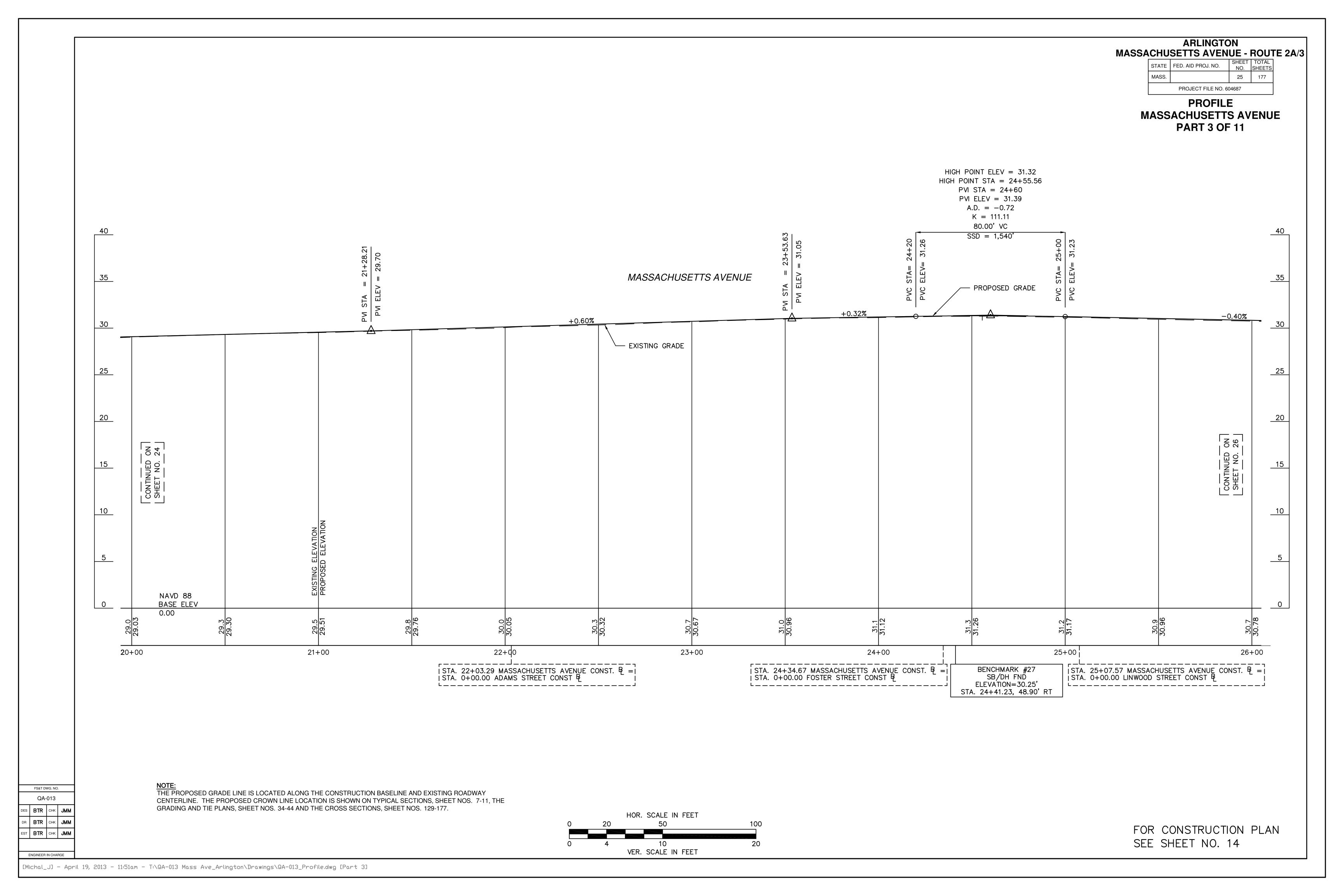


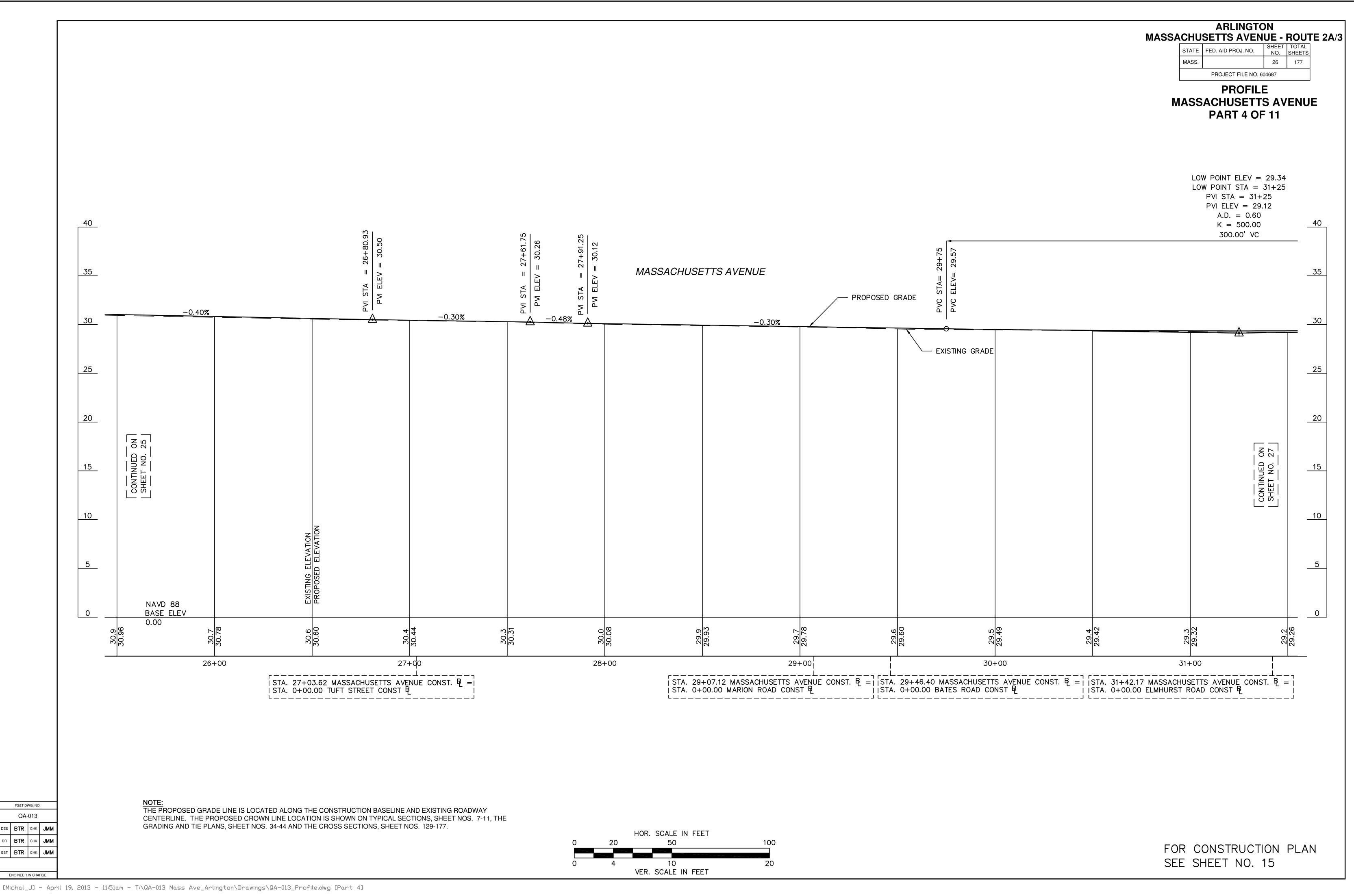


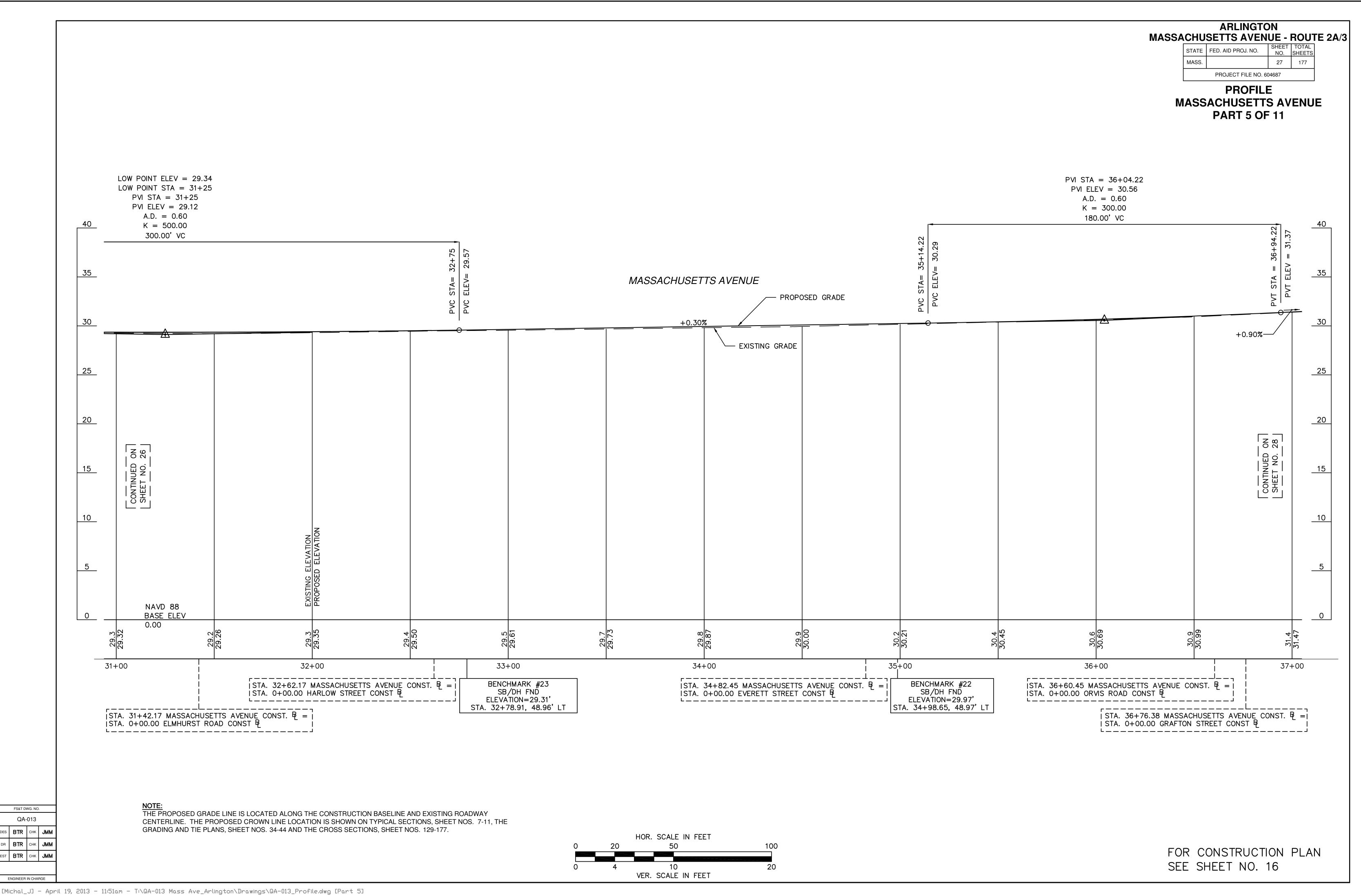
[Michal_J] - April 19, 2013 - 11:51am - T:\QA-013 Mass Ave_Arlington\Drawings\QA-013_Profile.dwg [Part 1]

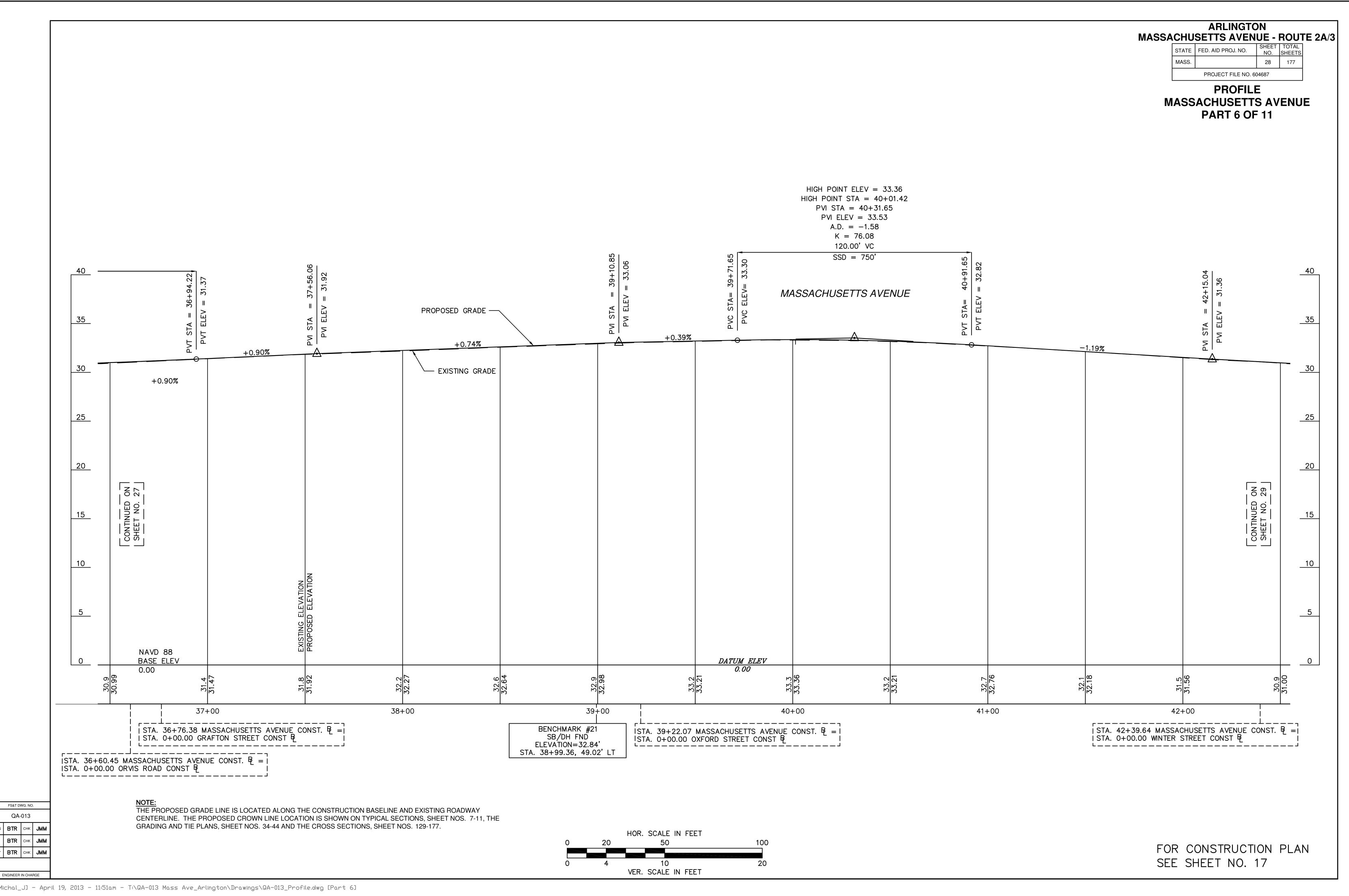
QA-013

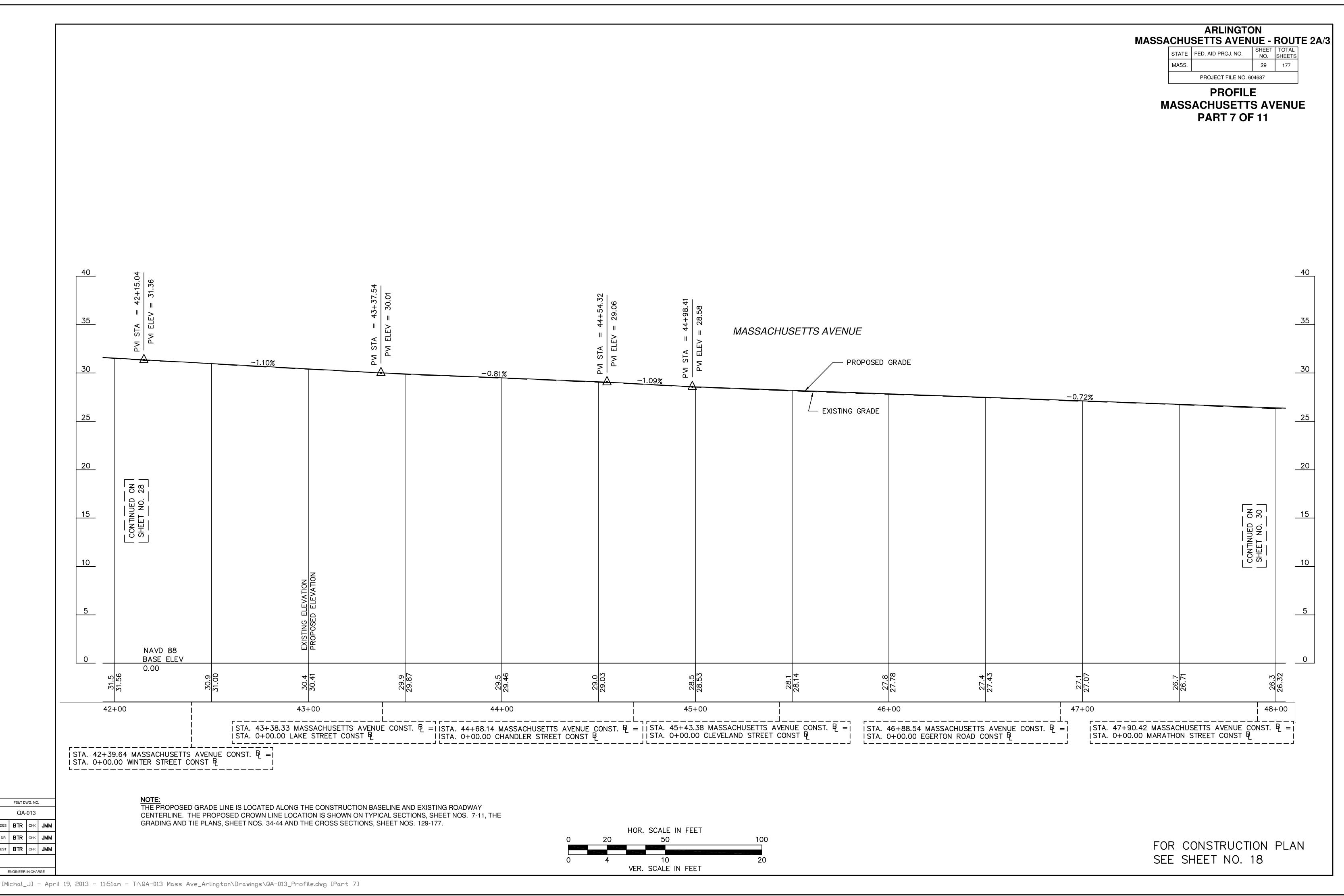


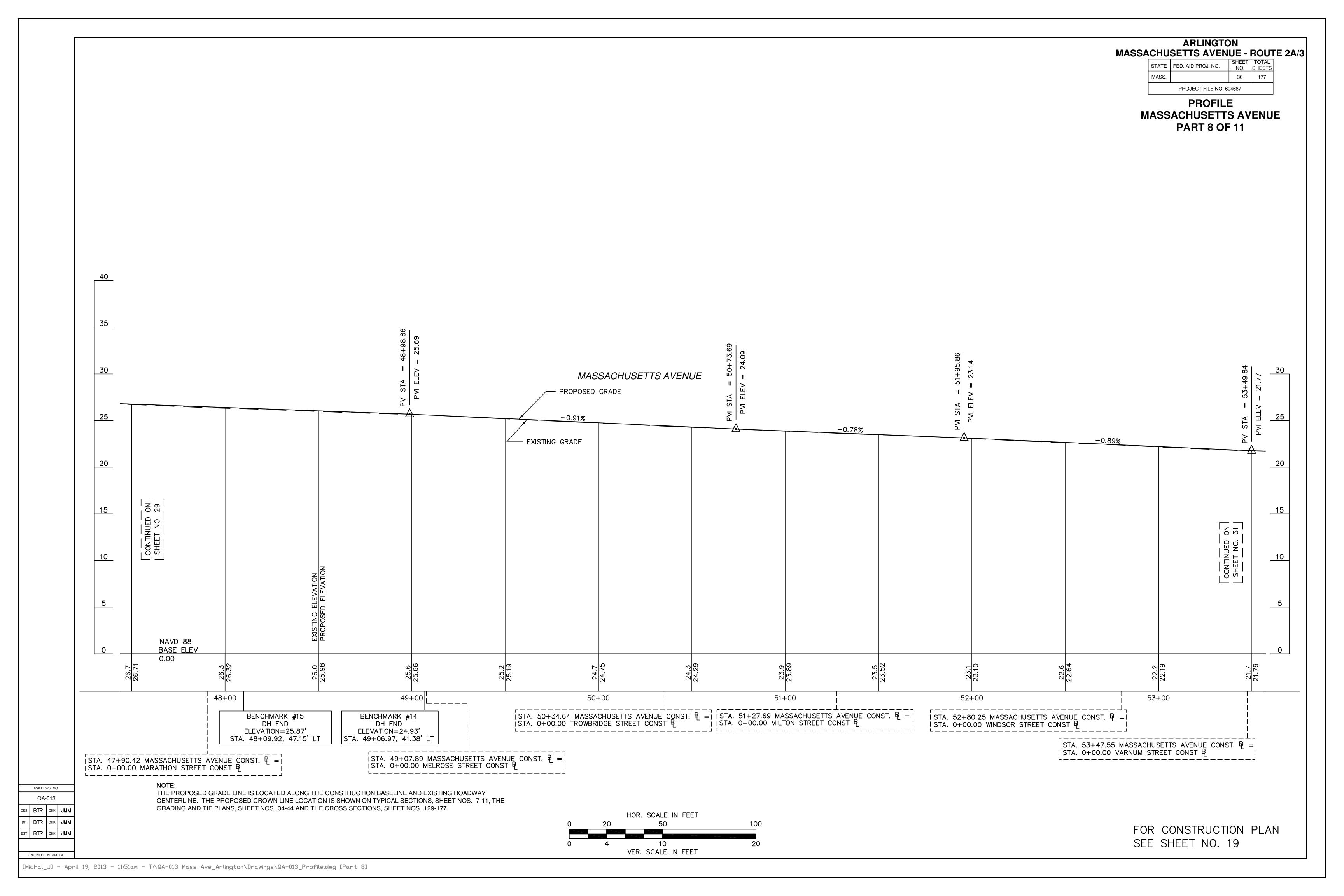


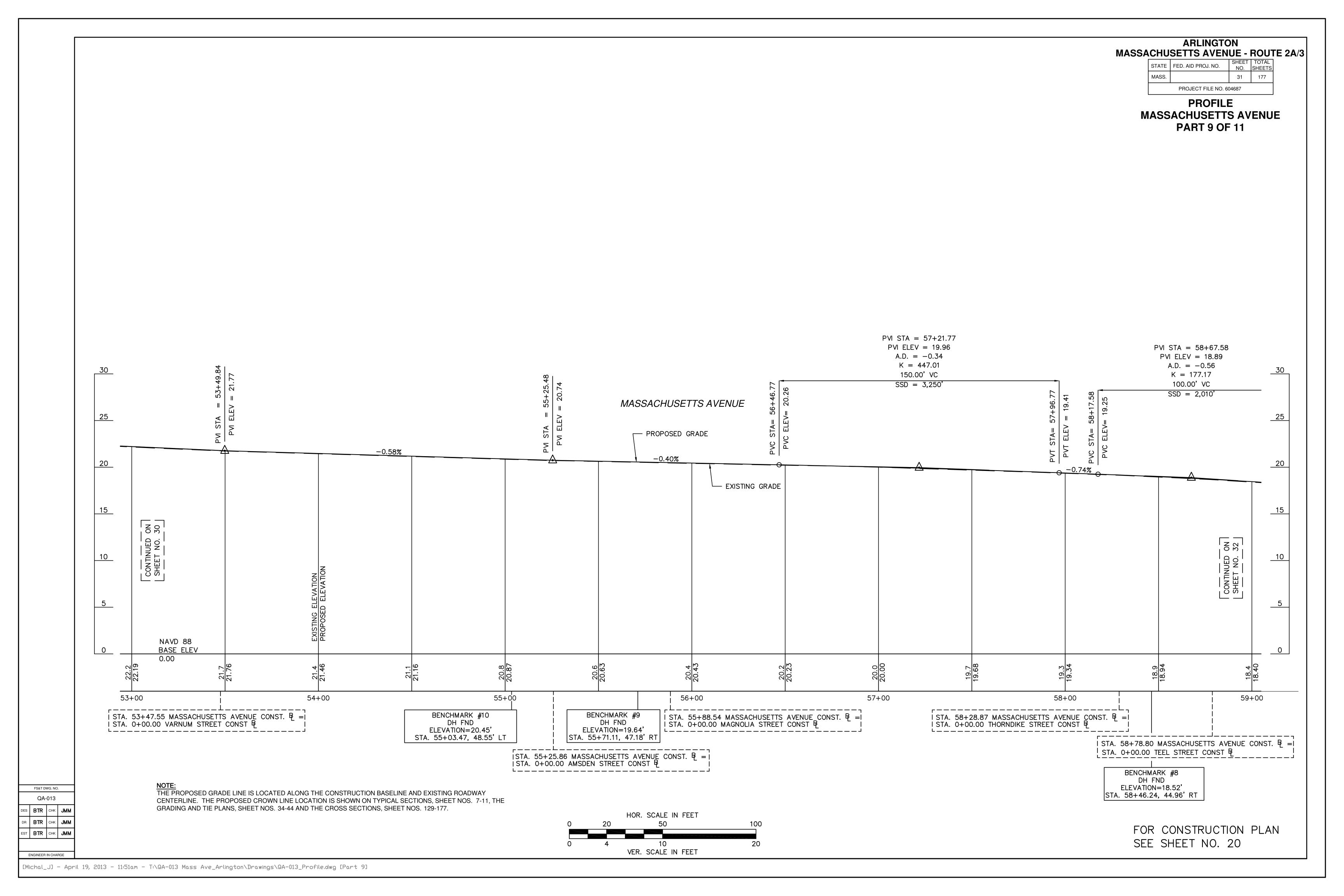


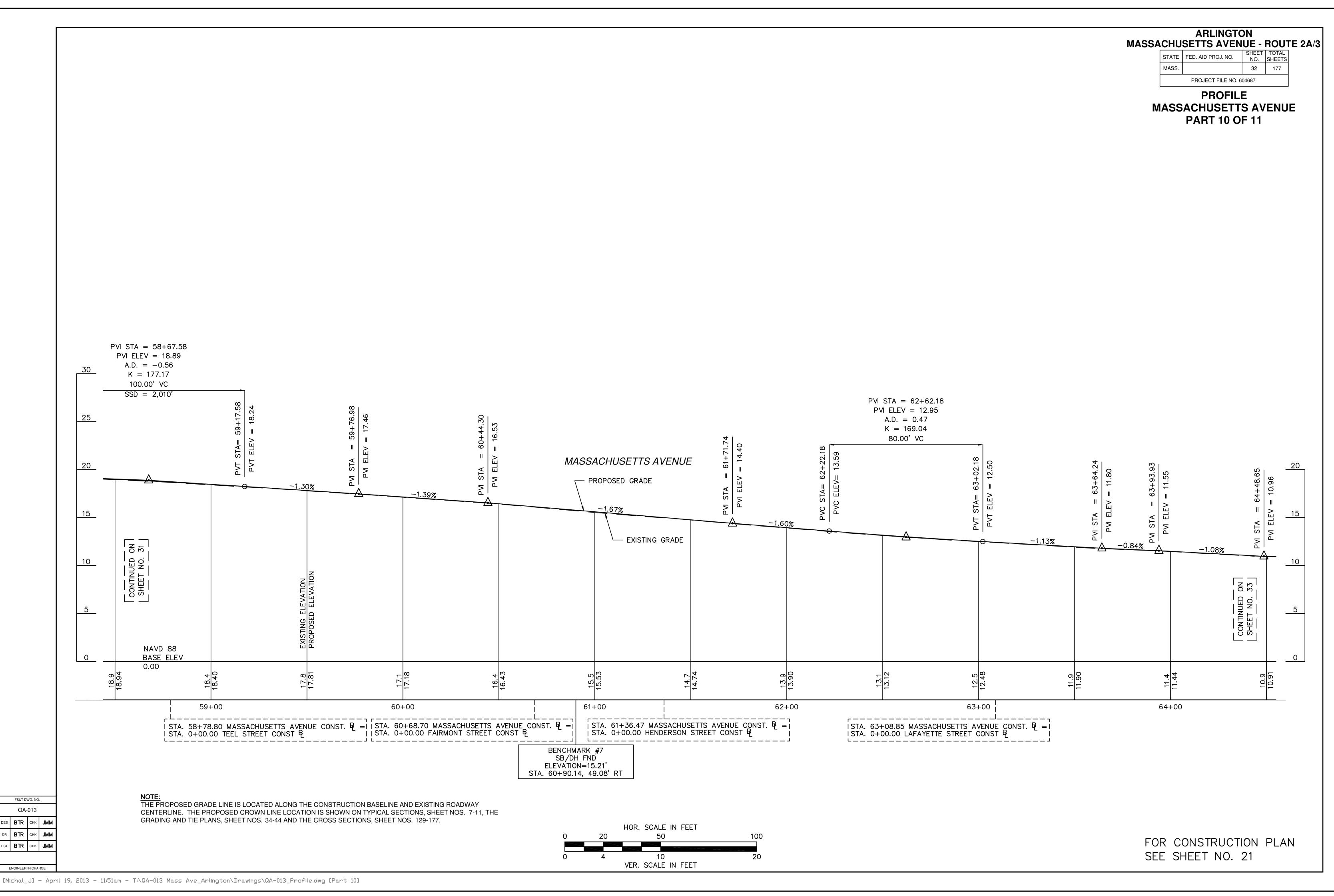








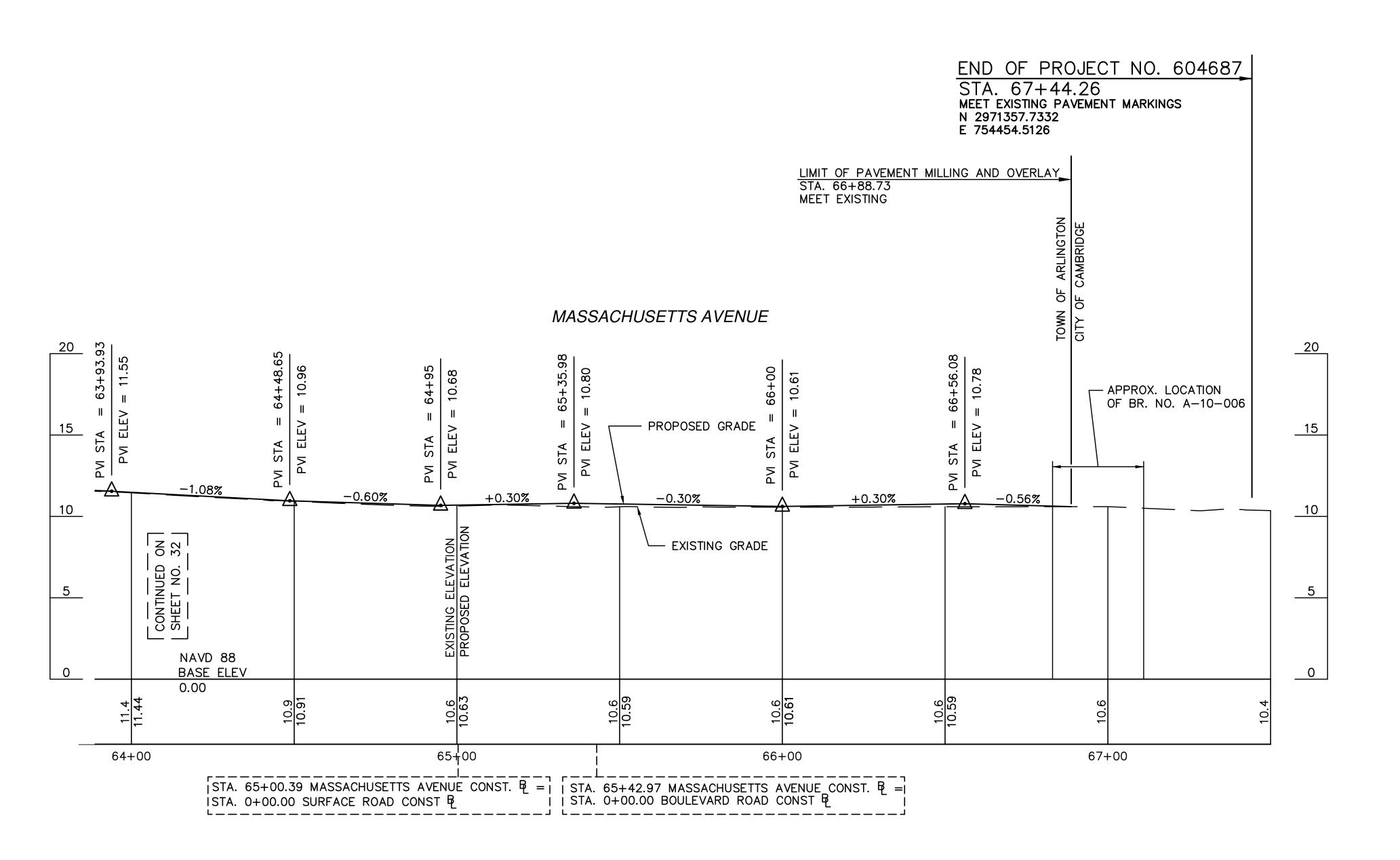




ARLINGTON **MASSACHUSETTS AVENUE - ROUTE 2A/3**

> STATE FED. AID PROJ. NO. PROJECT FILE NO. 604687

PROFILE MASSACHUSETTS AVENUE **PART 11 OF 11**

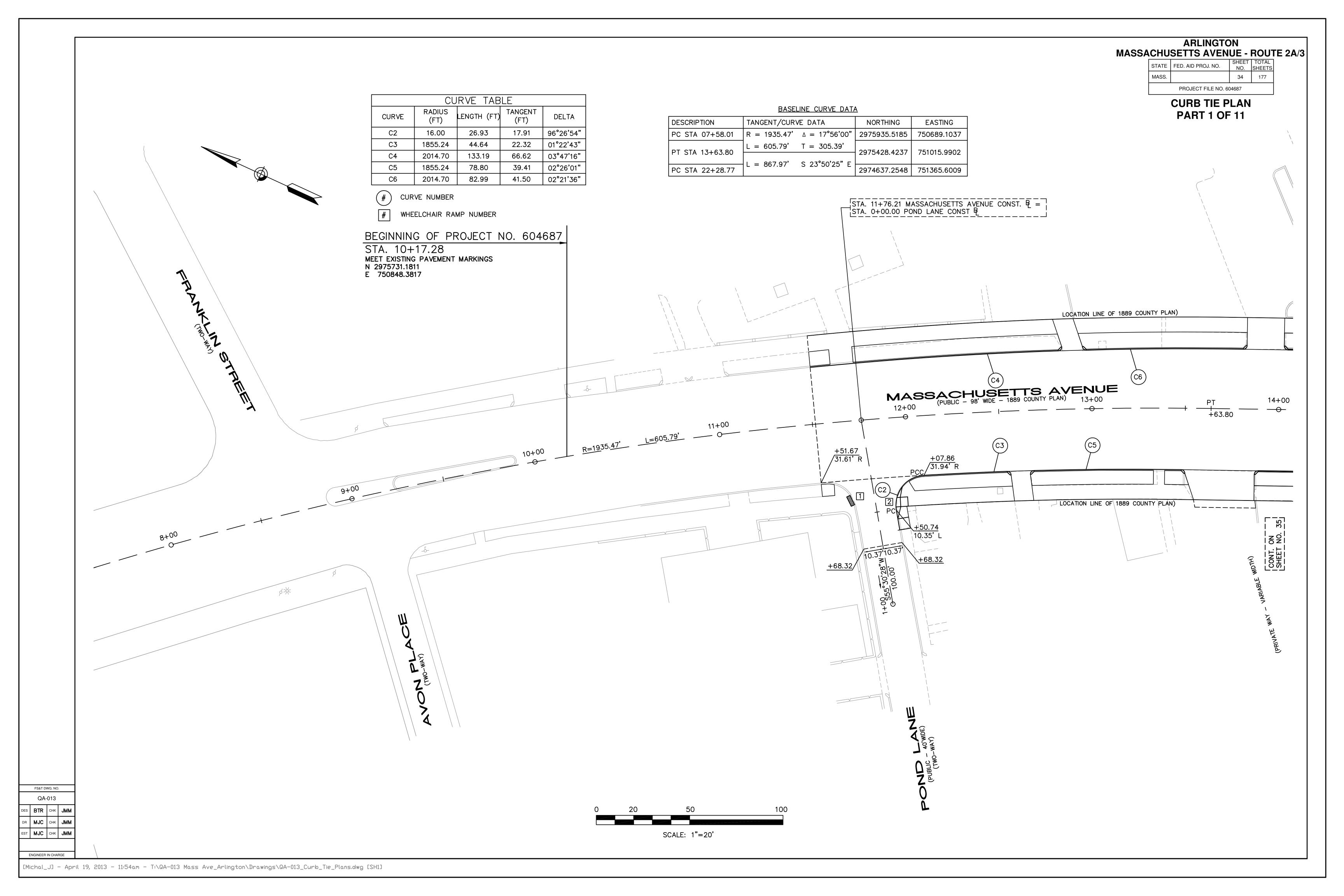


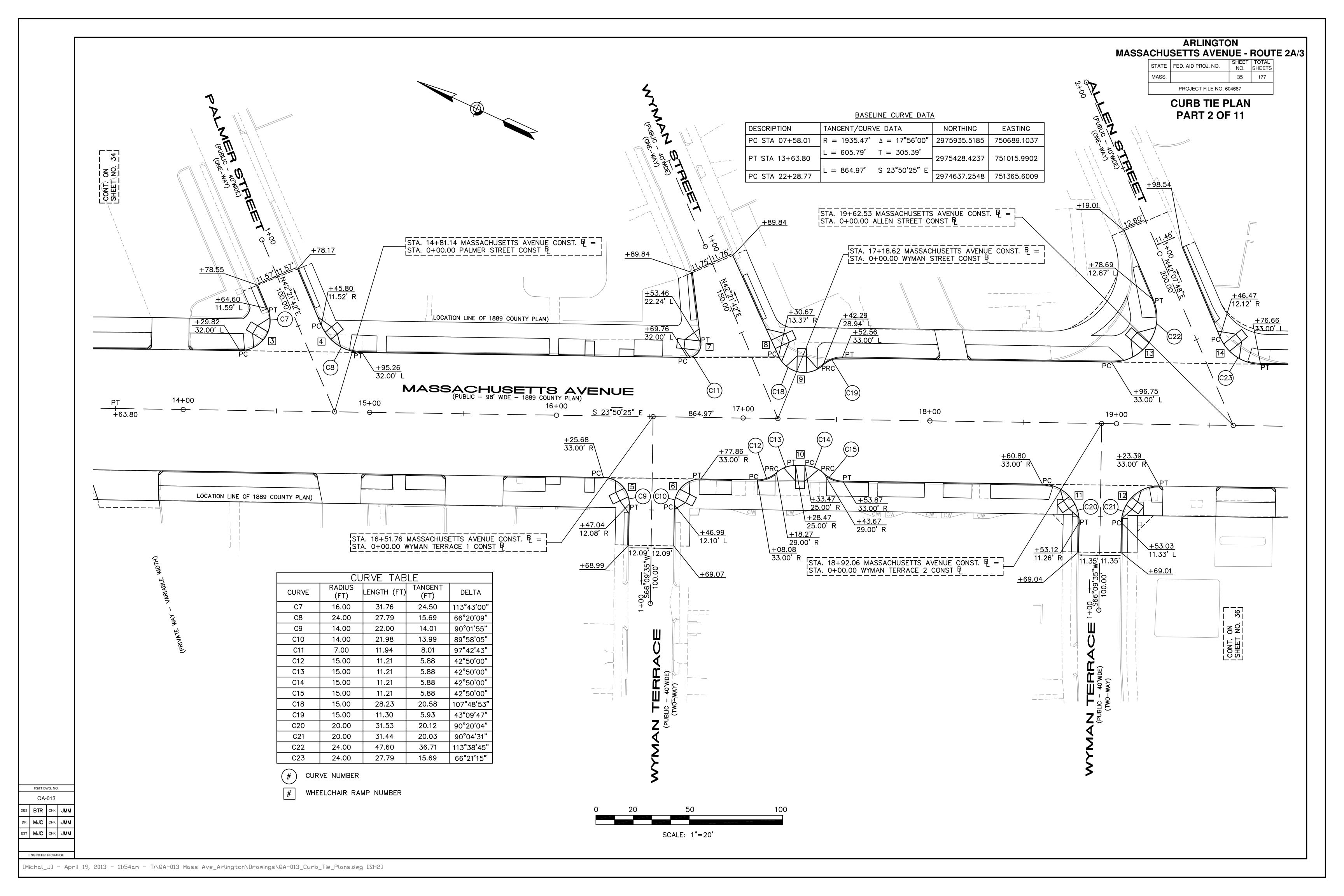
FS&T DWG. NO. QA-013

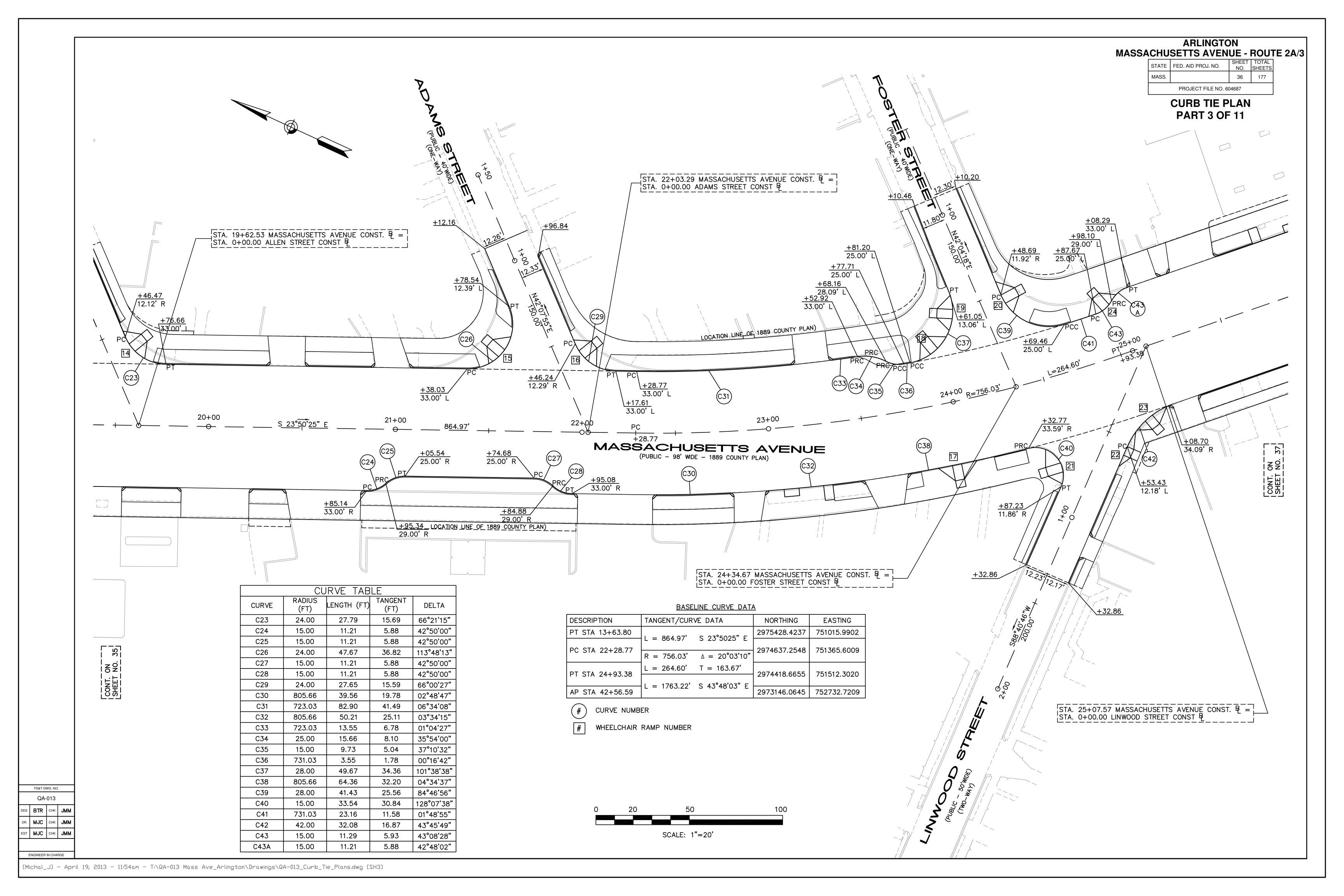
NOTE:
THE PROPOSED GRADE LINE IS LOCATED ALONG THE CONSTRUCTION BASELINE AND EXISTING ROADWAY CENTERLINE. THE PROPOSED CROWN LINE LOCATION IS SHOWN ON TYPICAL SECTIONS, SHEET NOS. 7-11, THE GRADING AND TIE PLANS, SHEET NOS. 34-44 AND THE CROSS SECTIONS, SHEET NOS. 129-177.

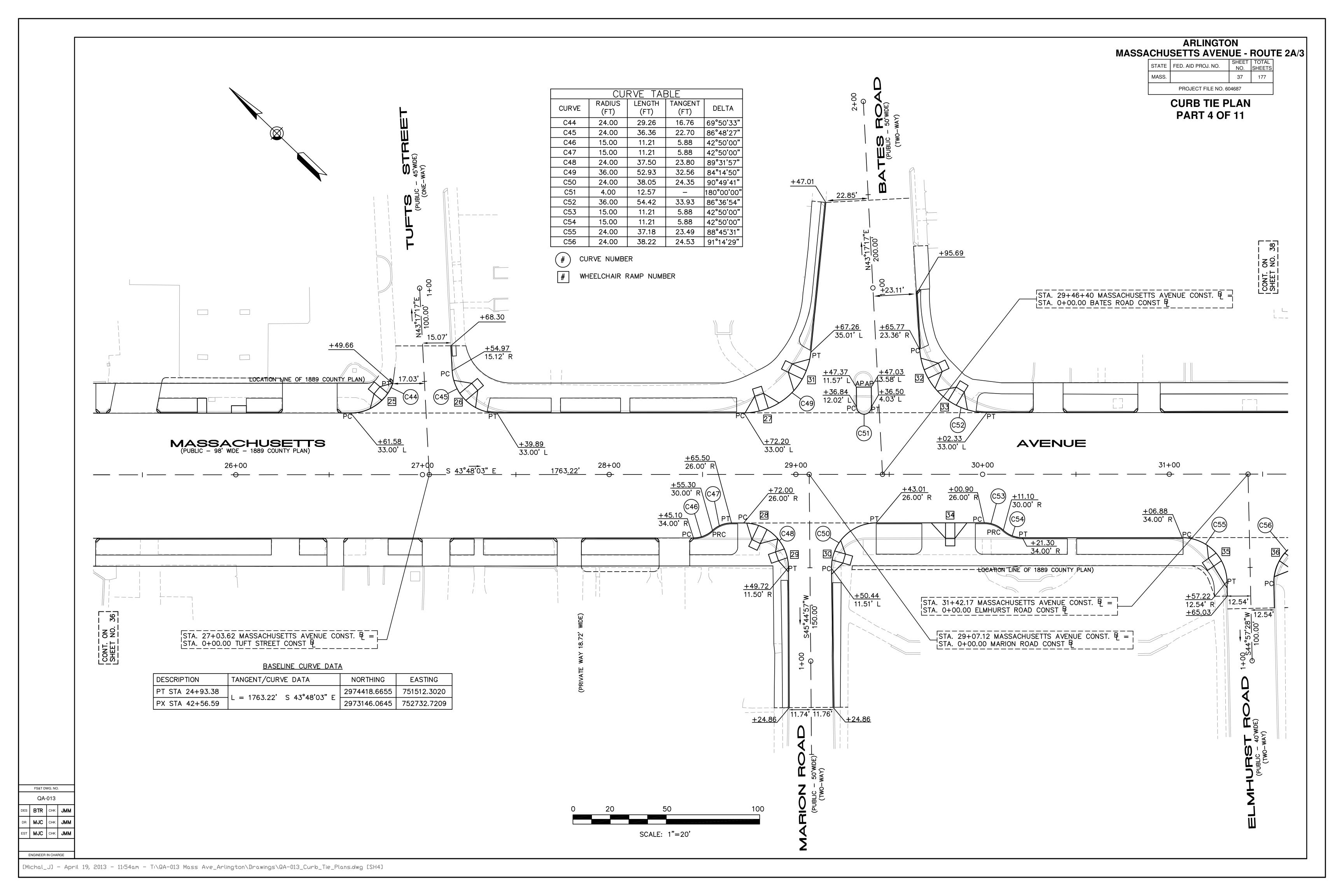
HOR. SCALE IN FEET VER. SCALE IN FEET

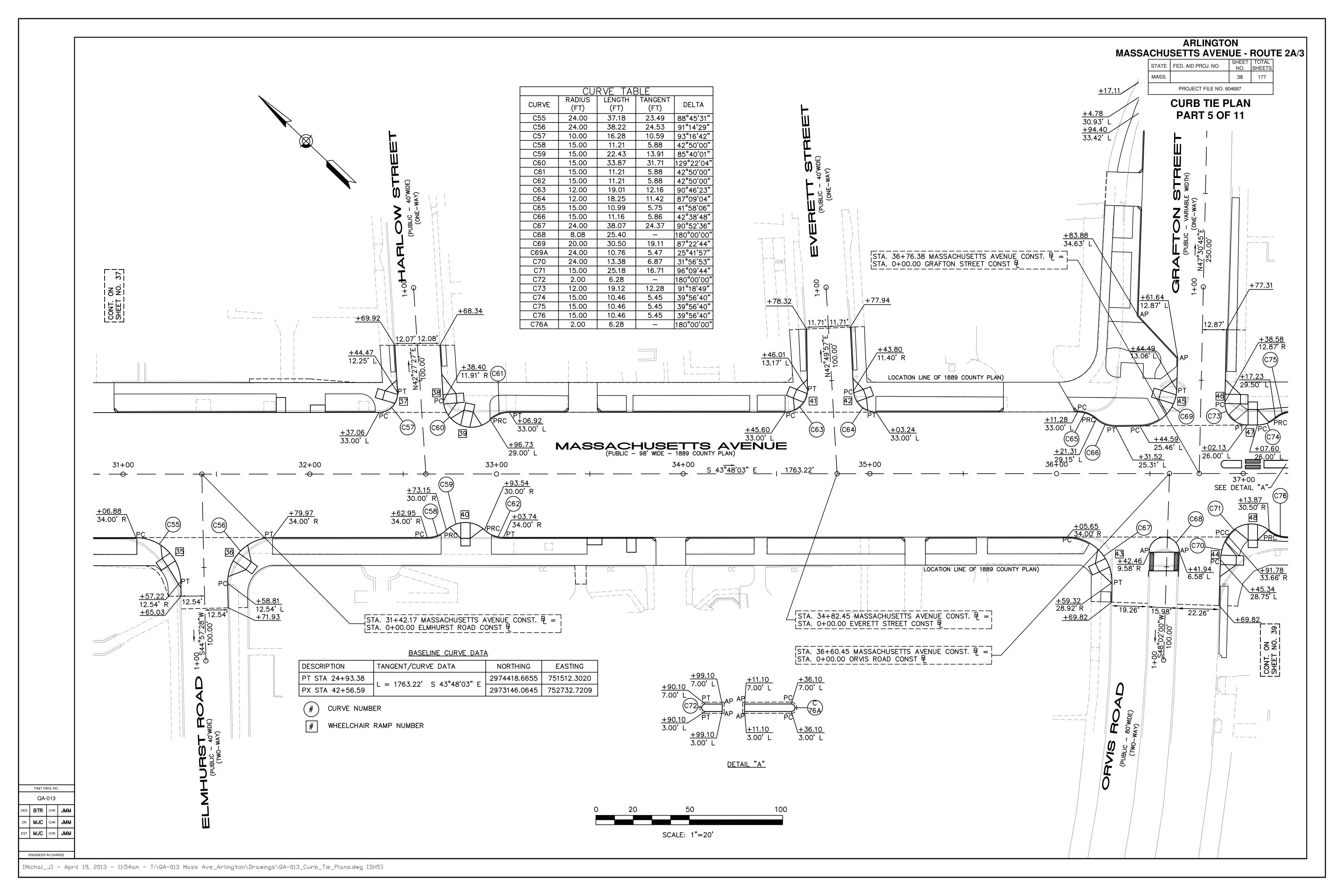
FOR CONSTRUCTION PLAN SEE SHEET NO. 22

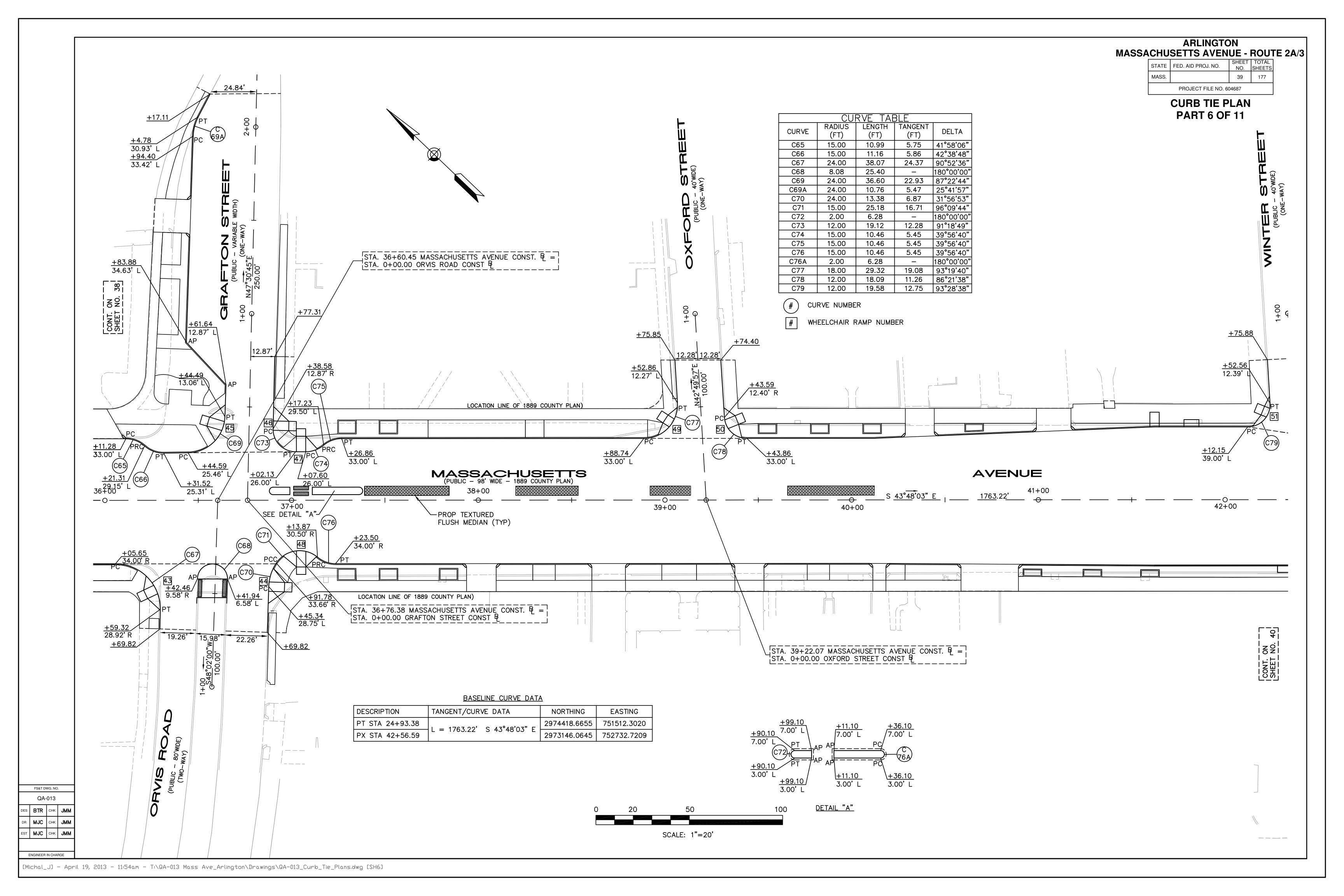


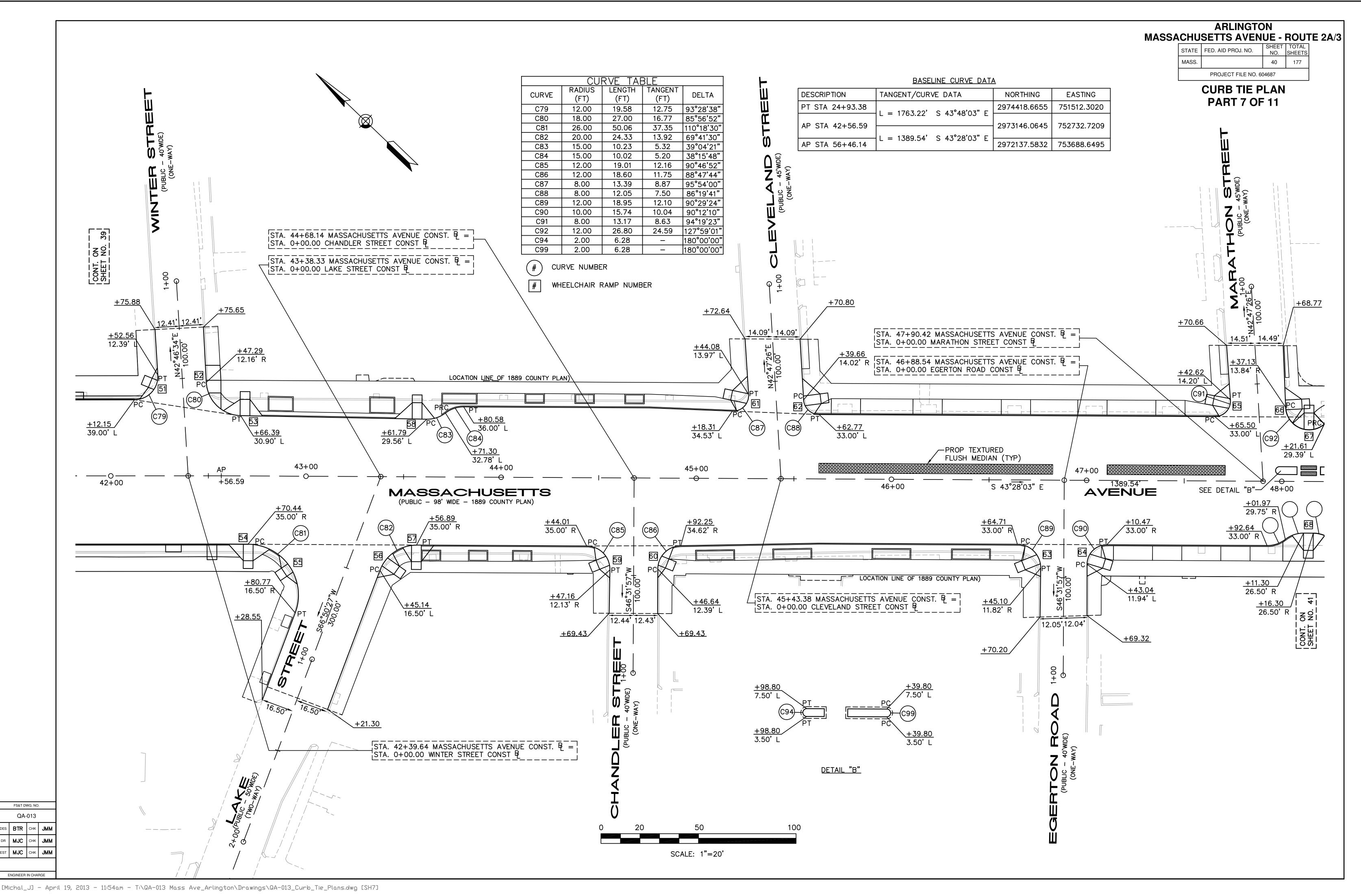


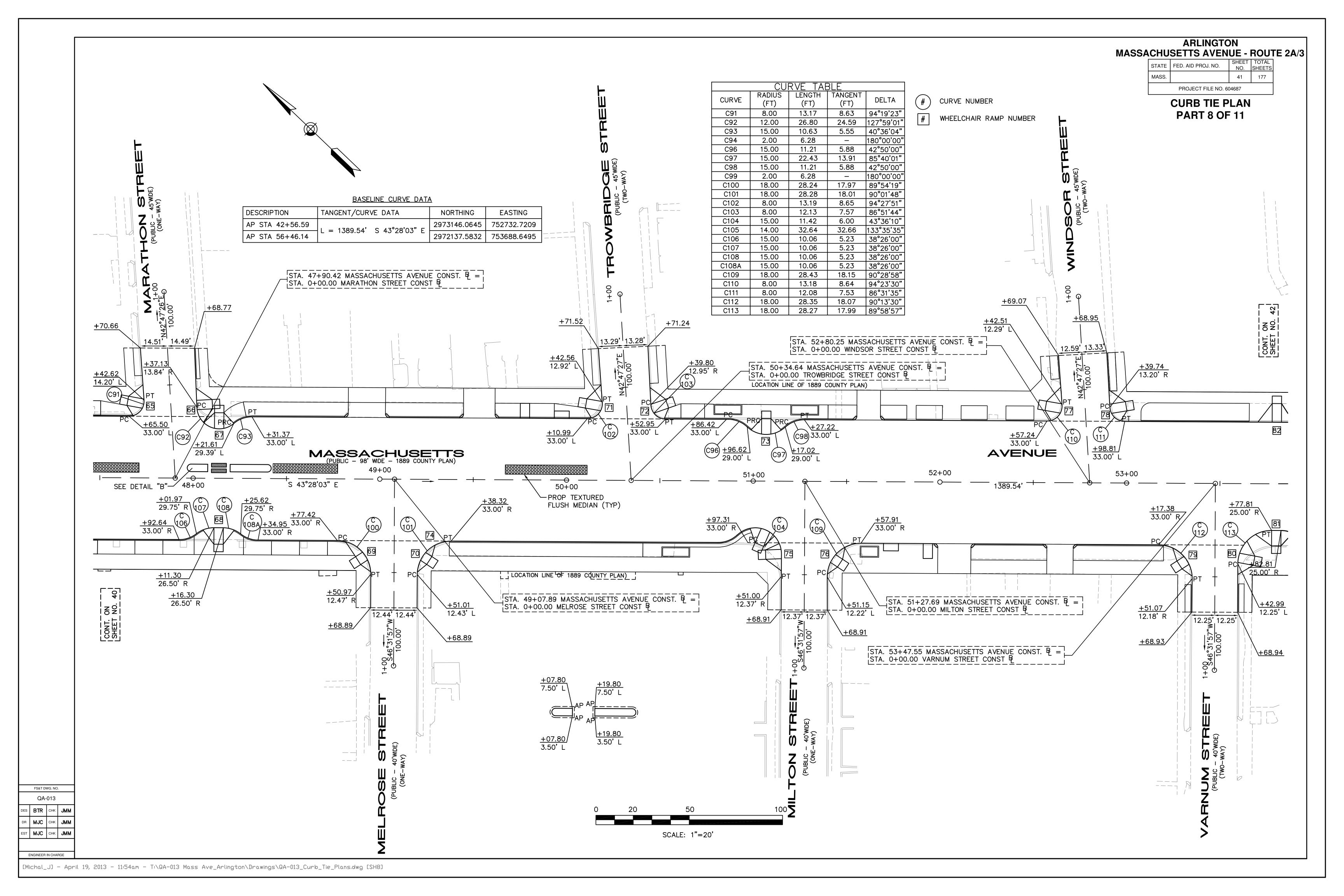


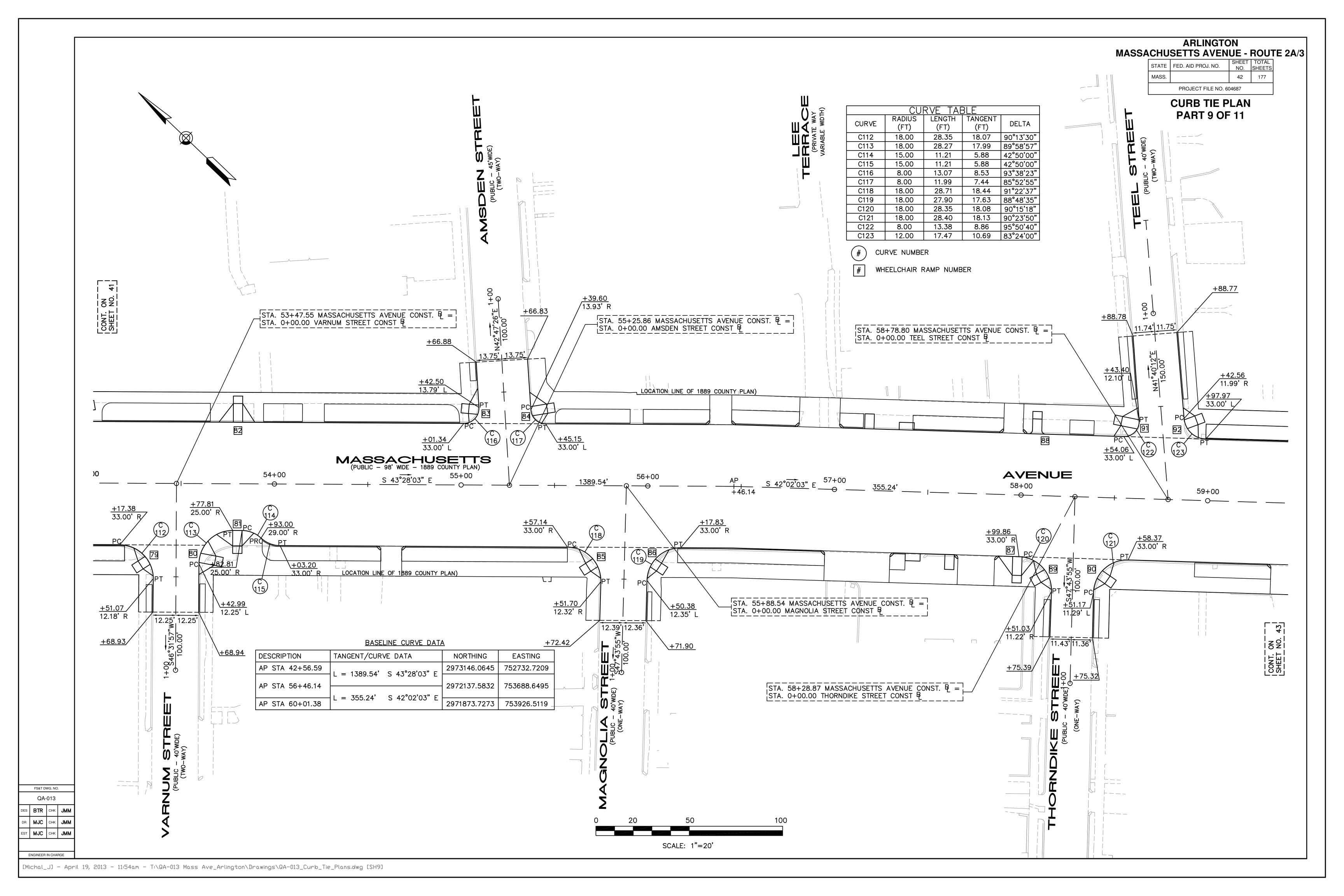


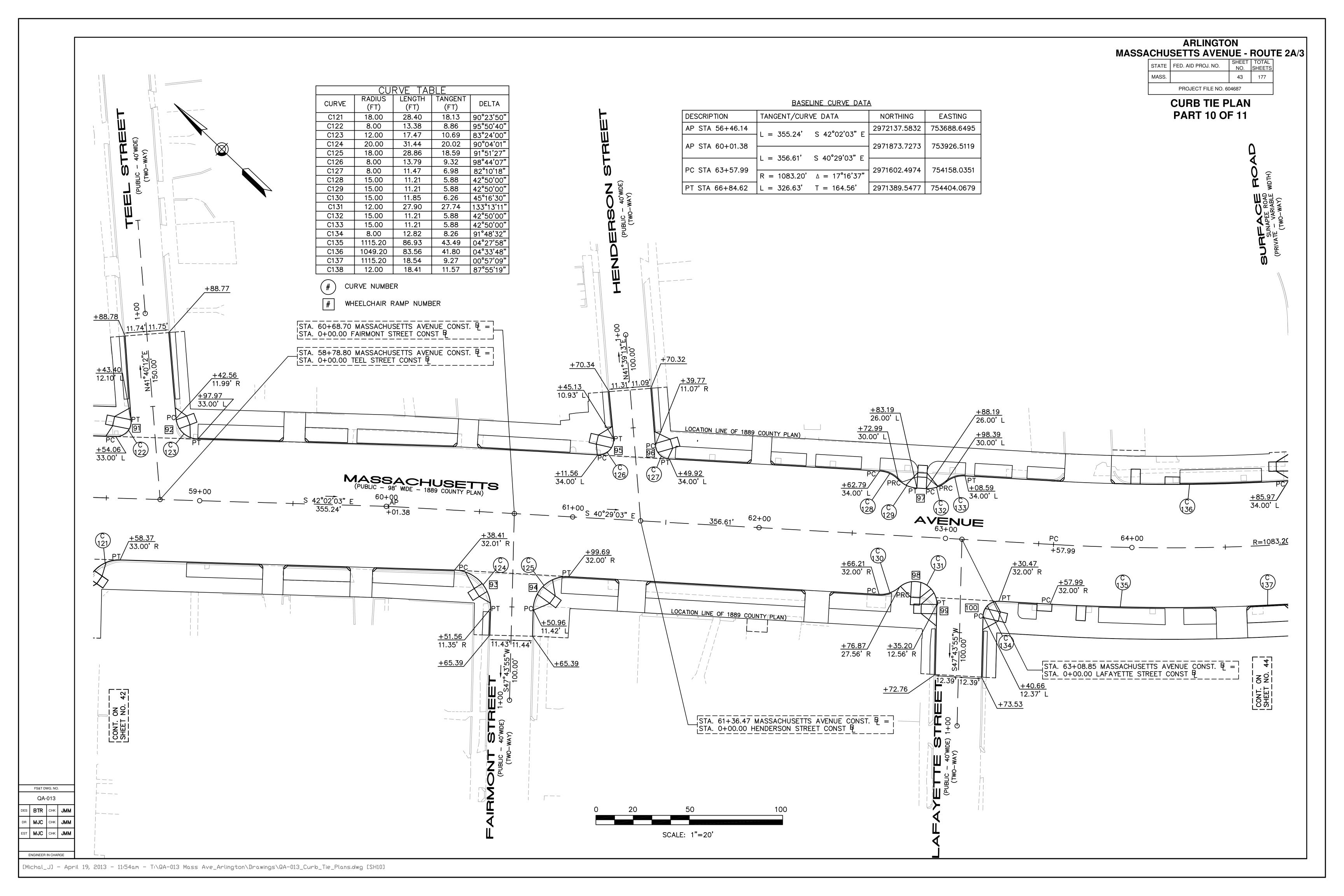


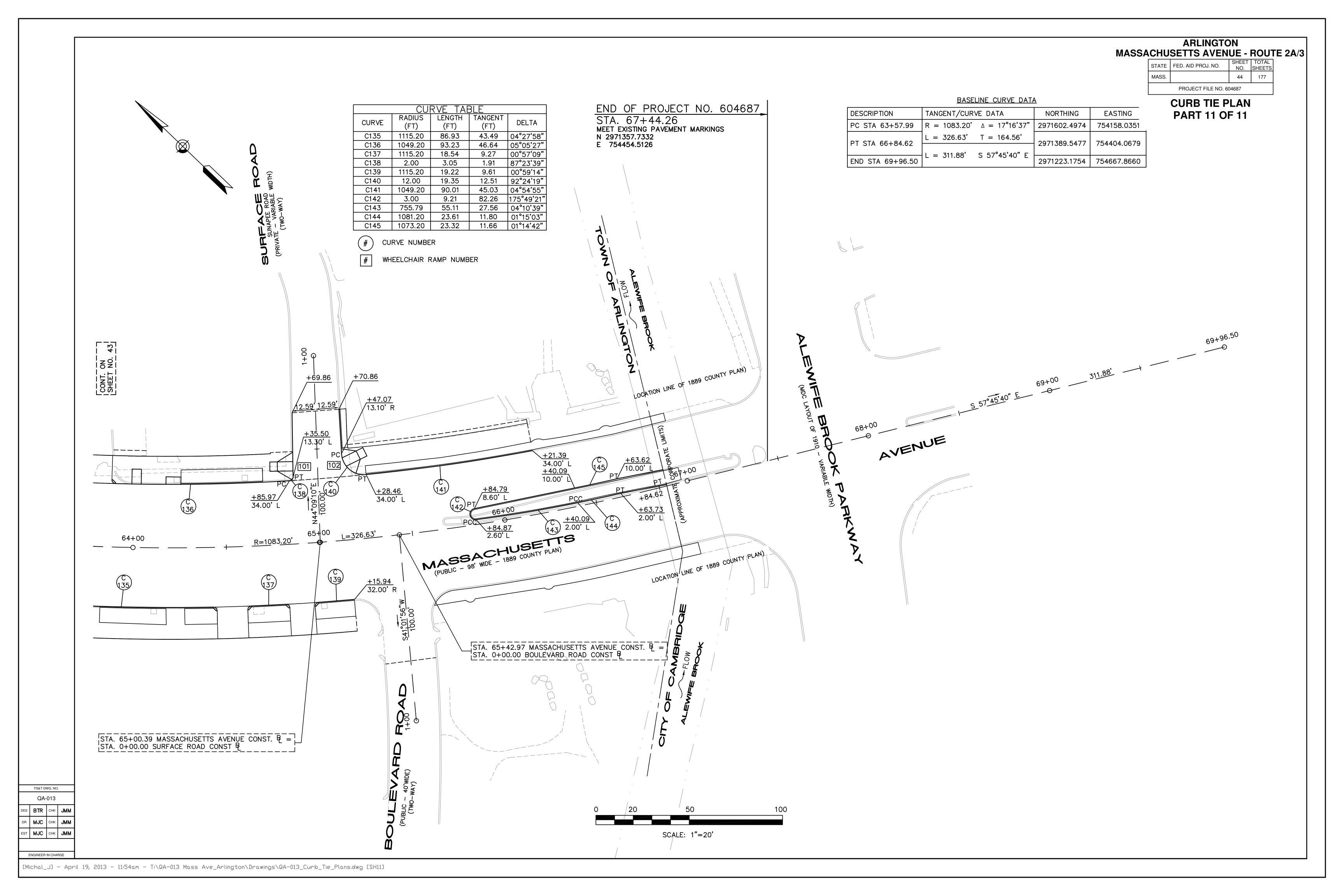


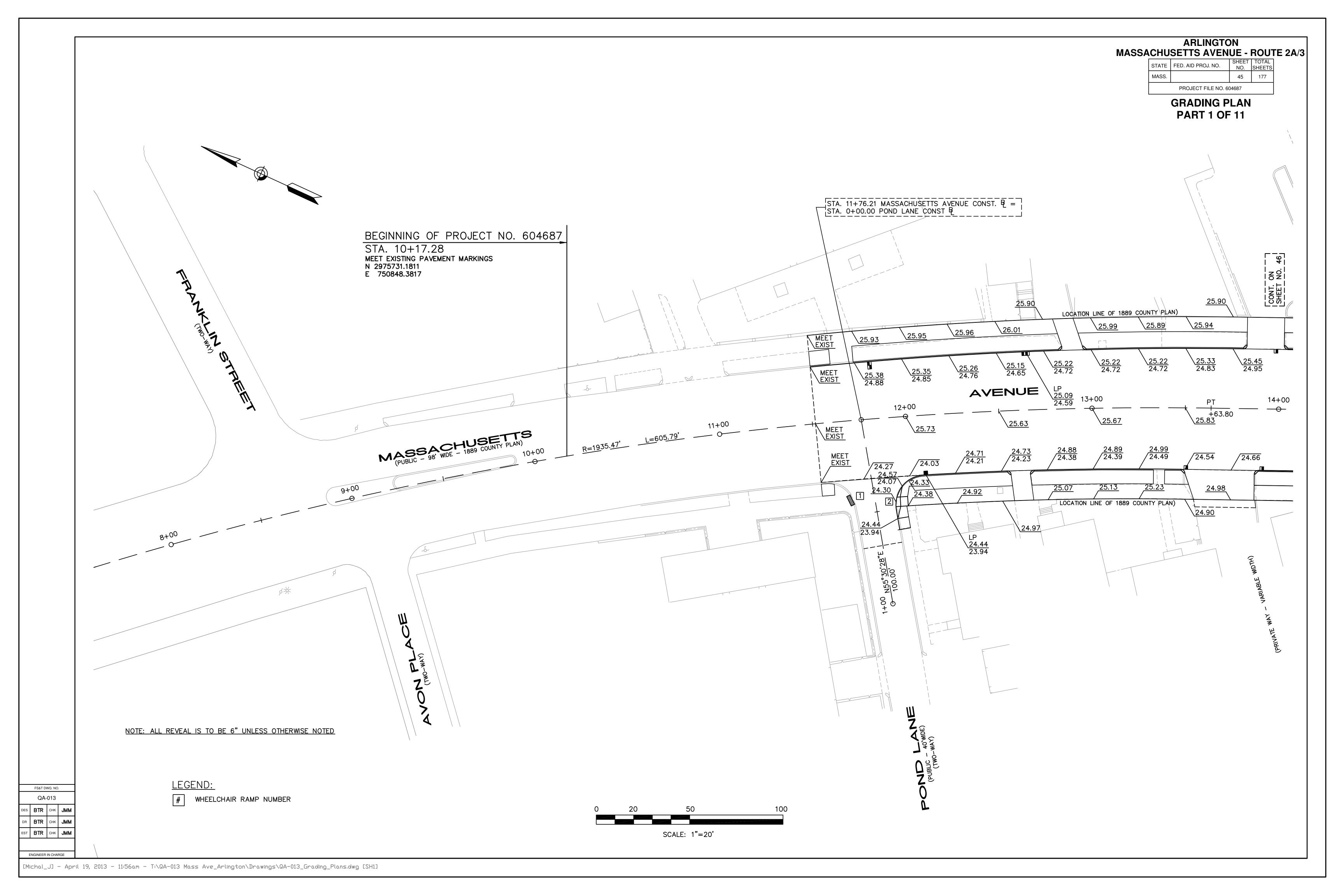


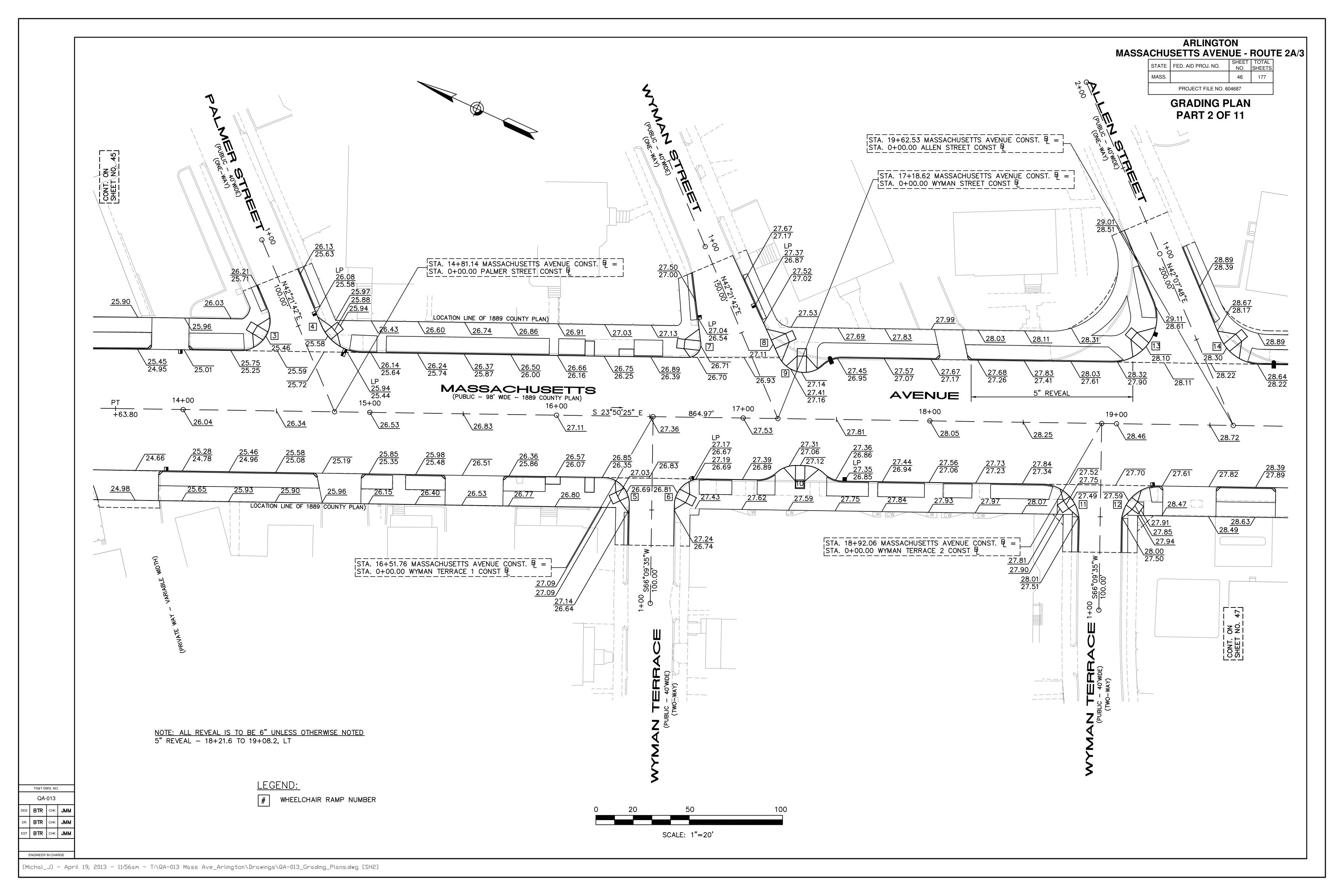


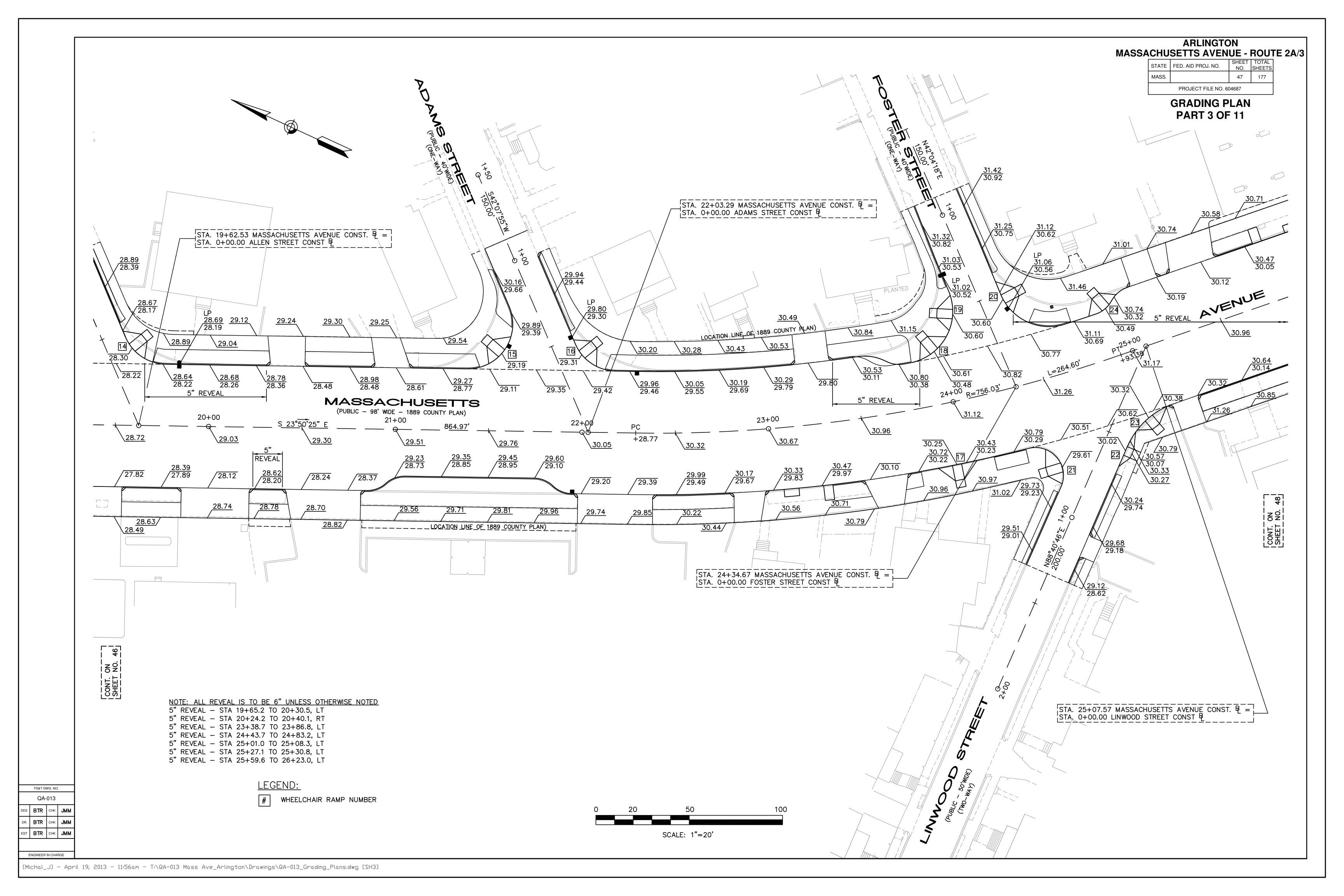


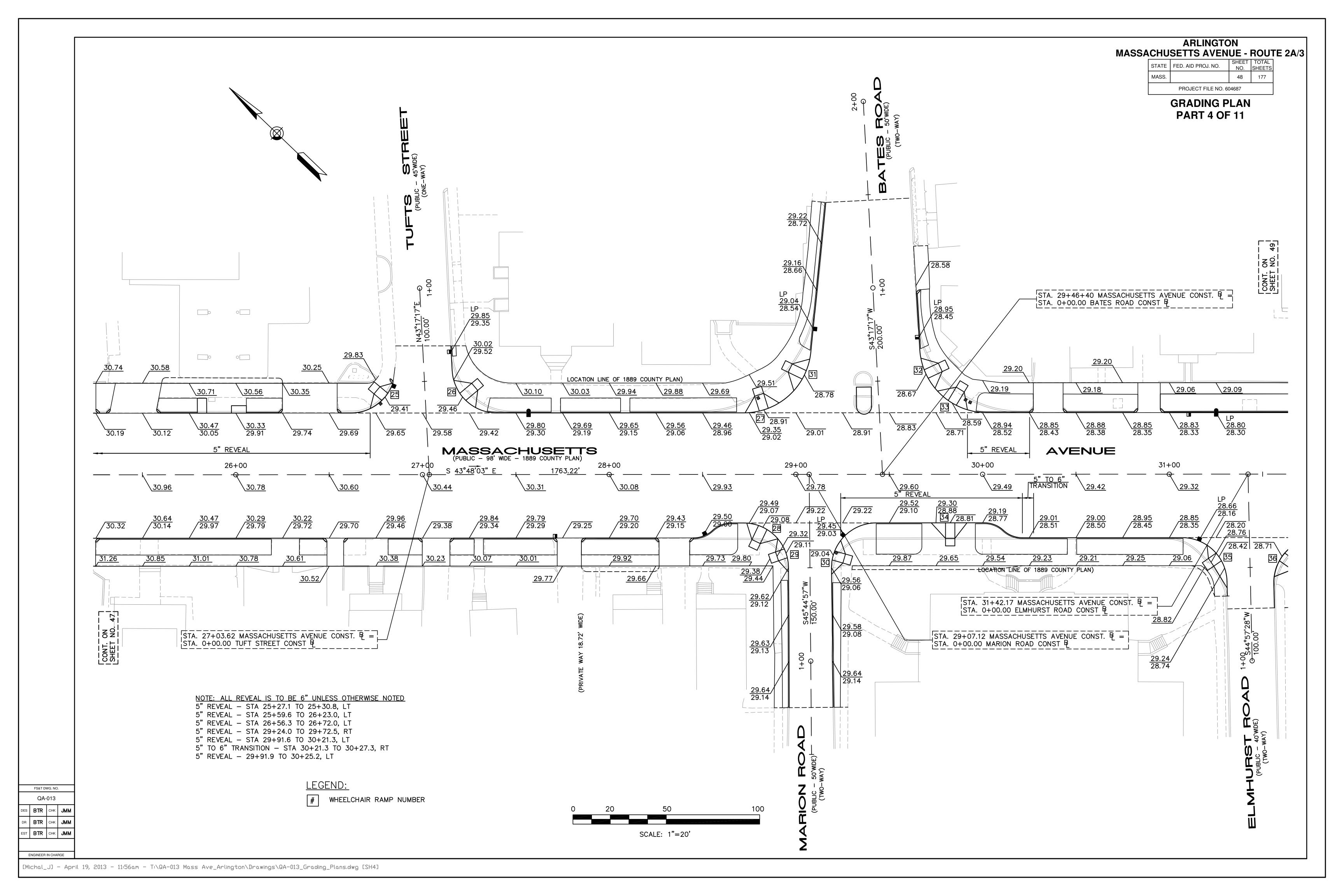


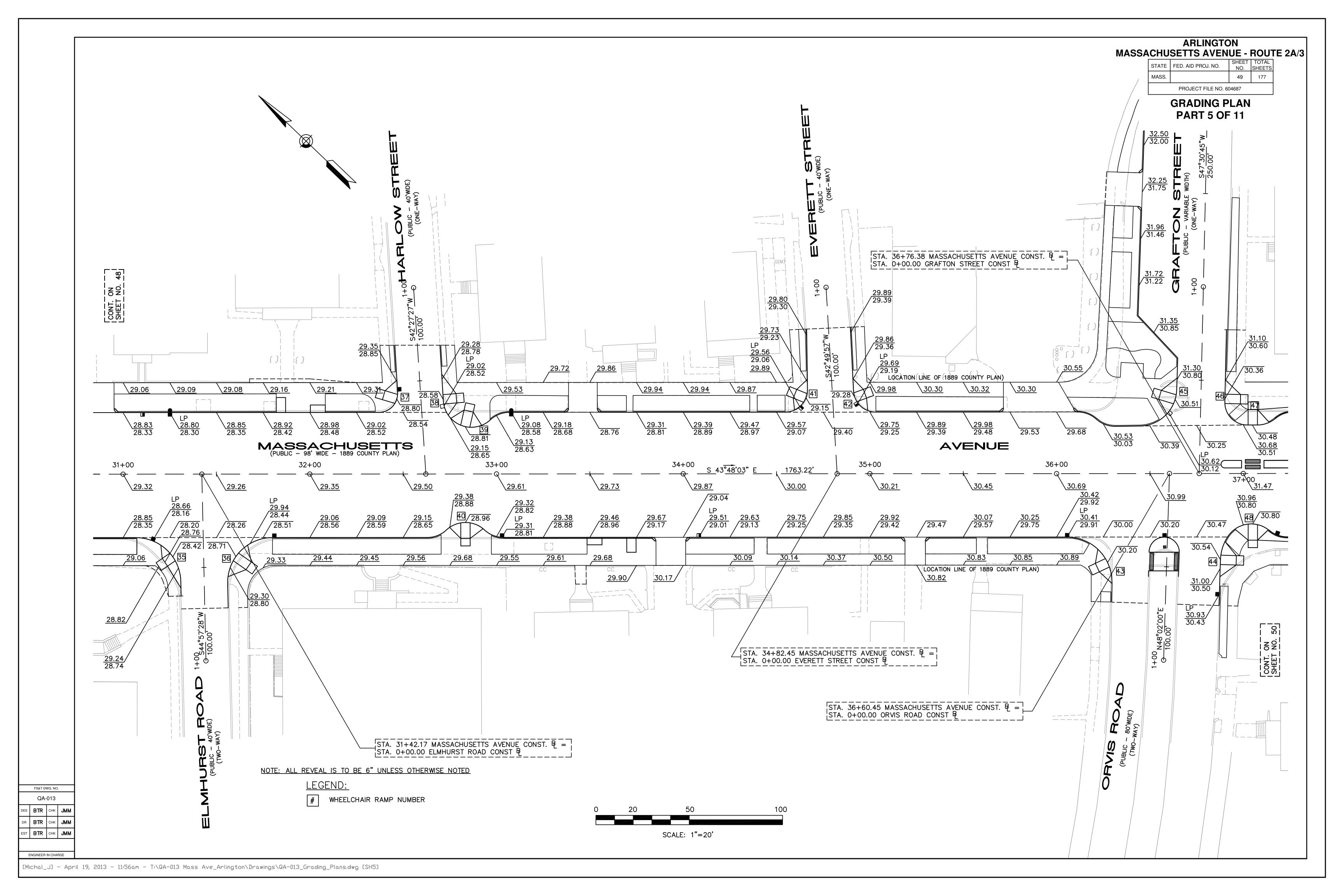


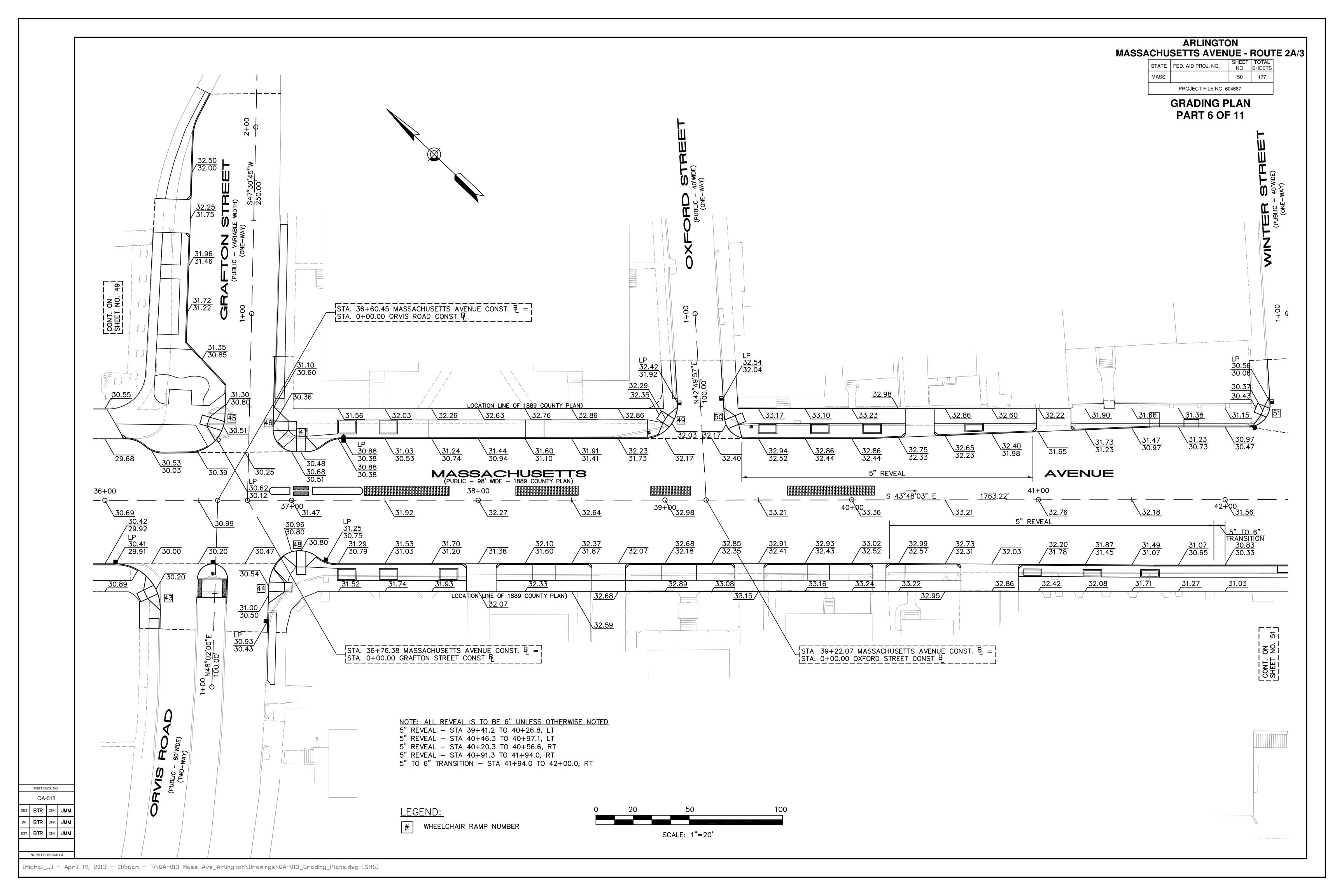


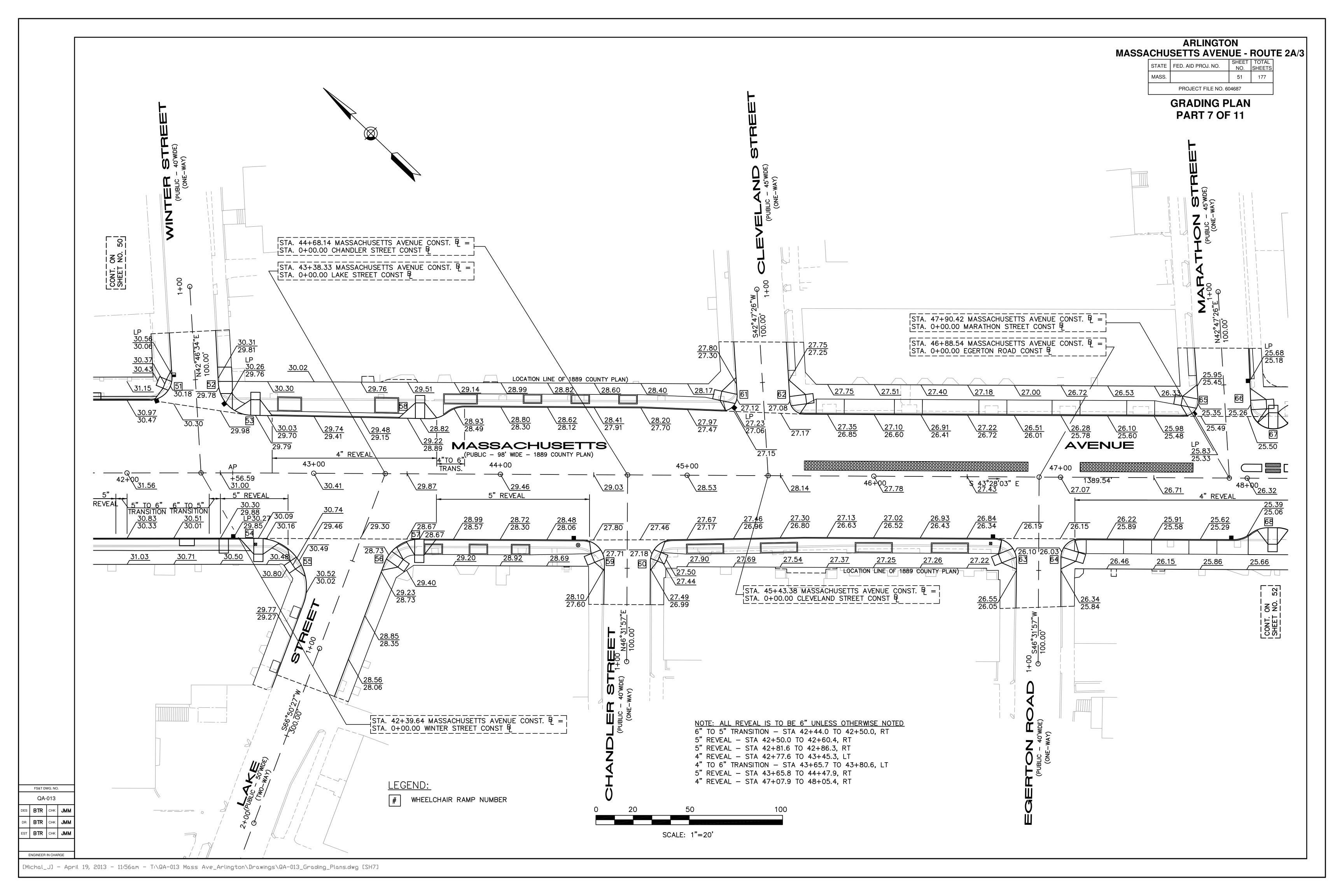


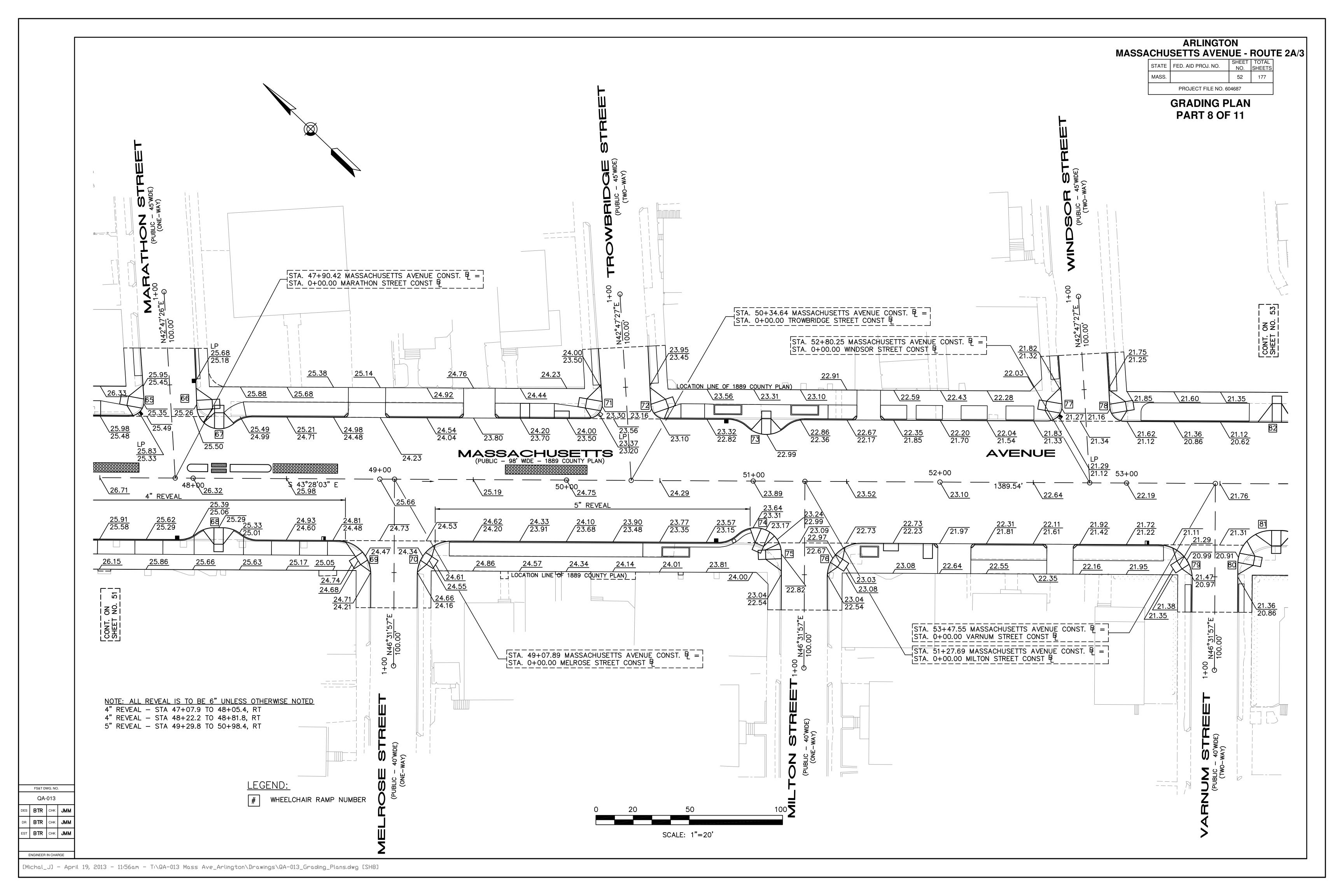


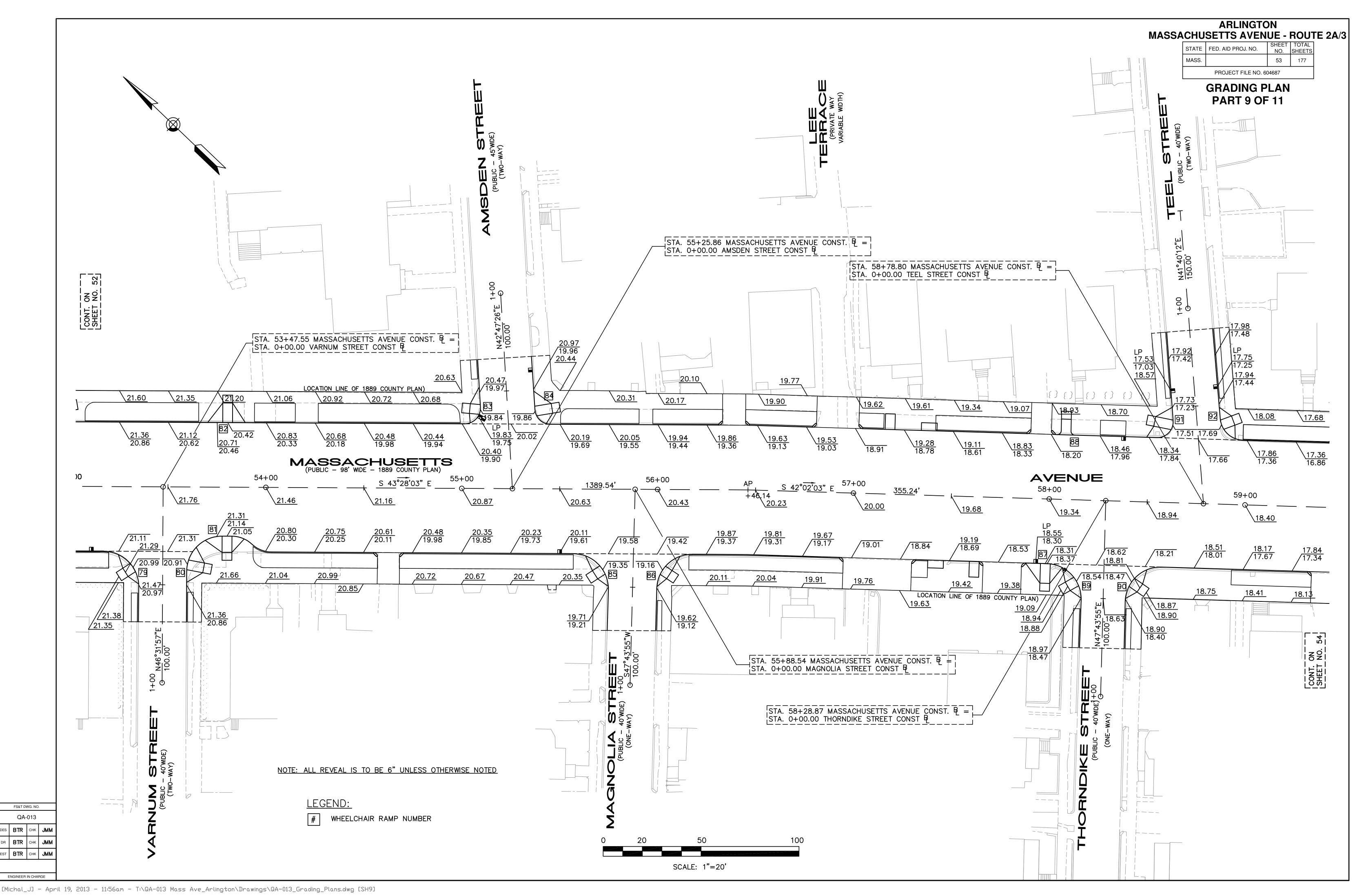


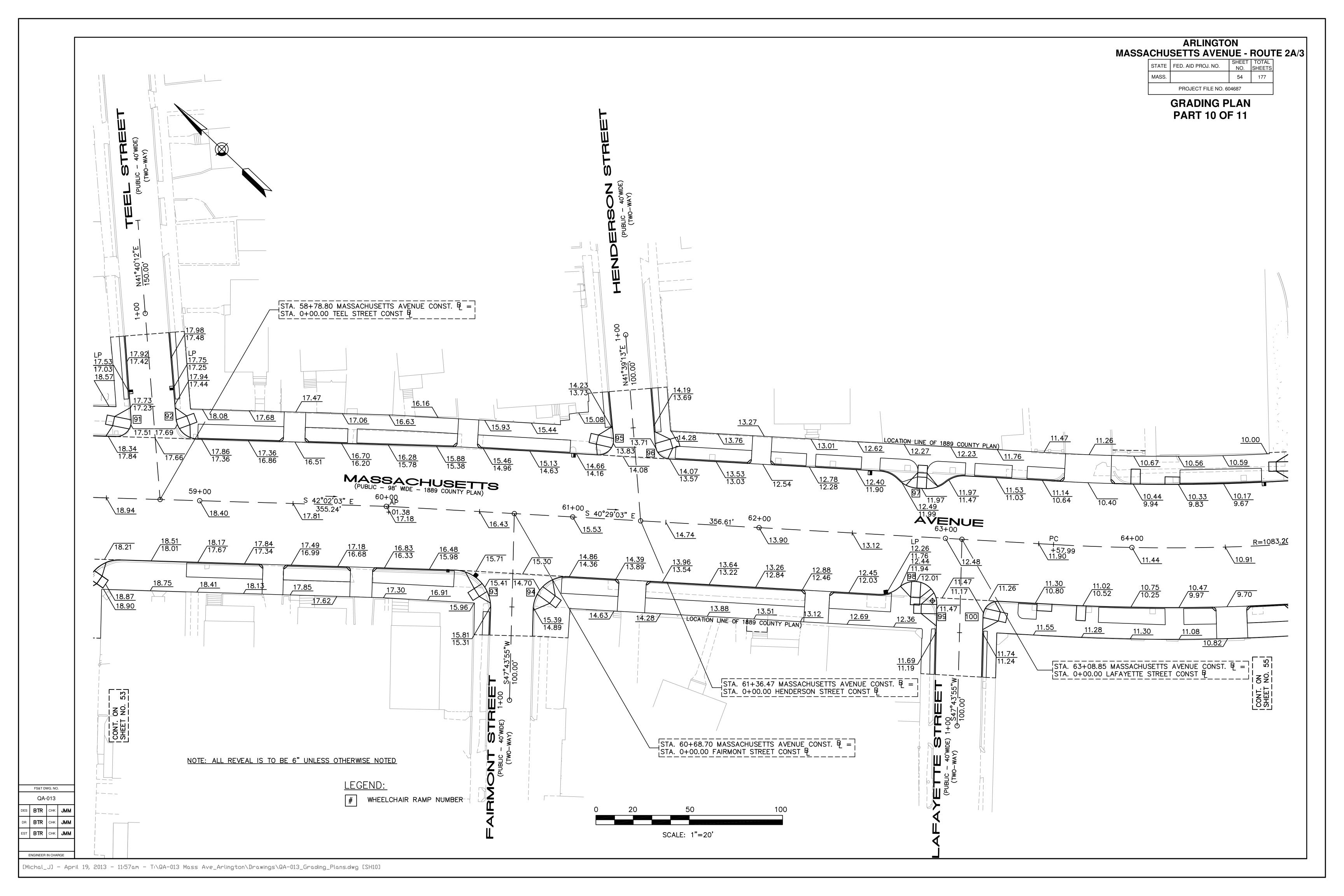


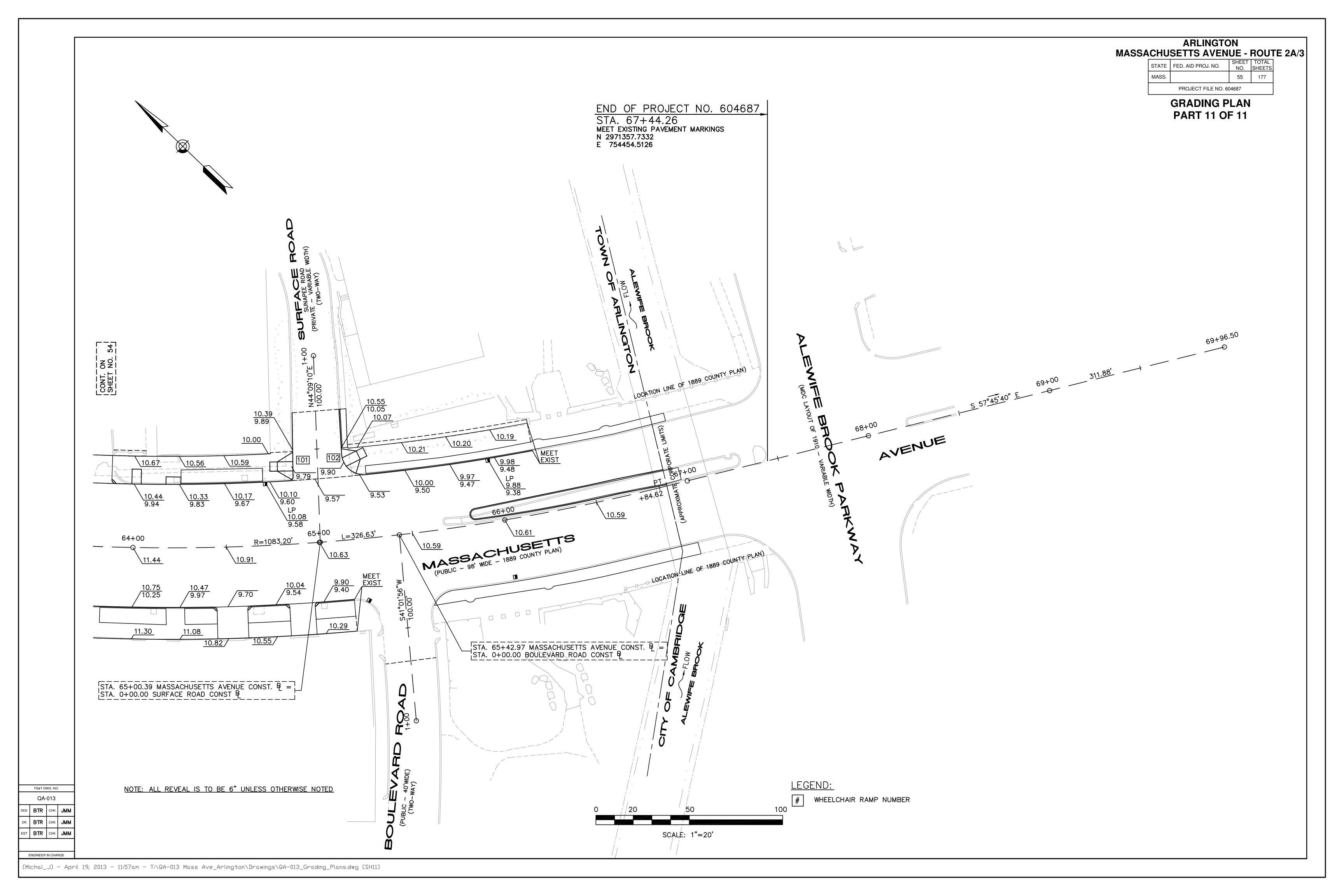


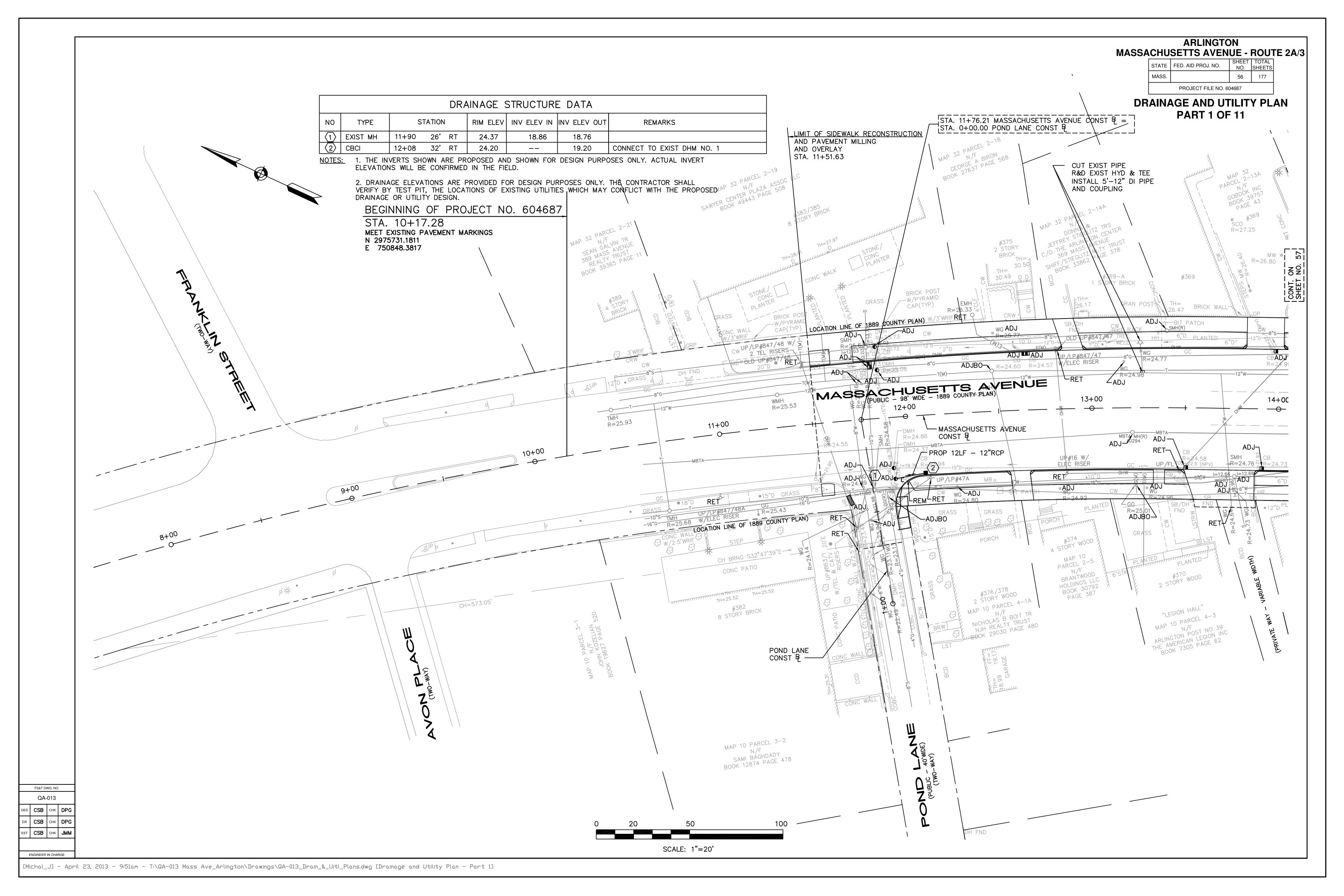


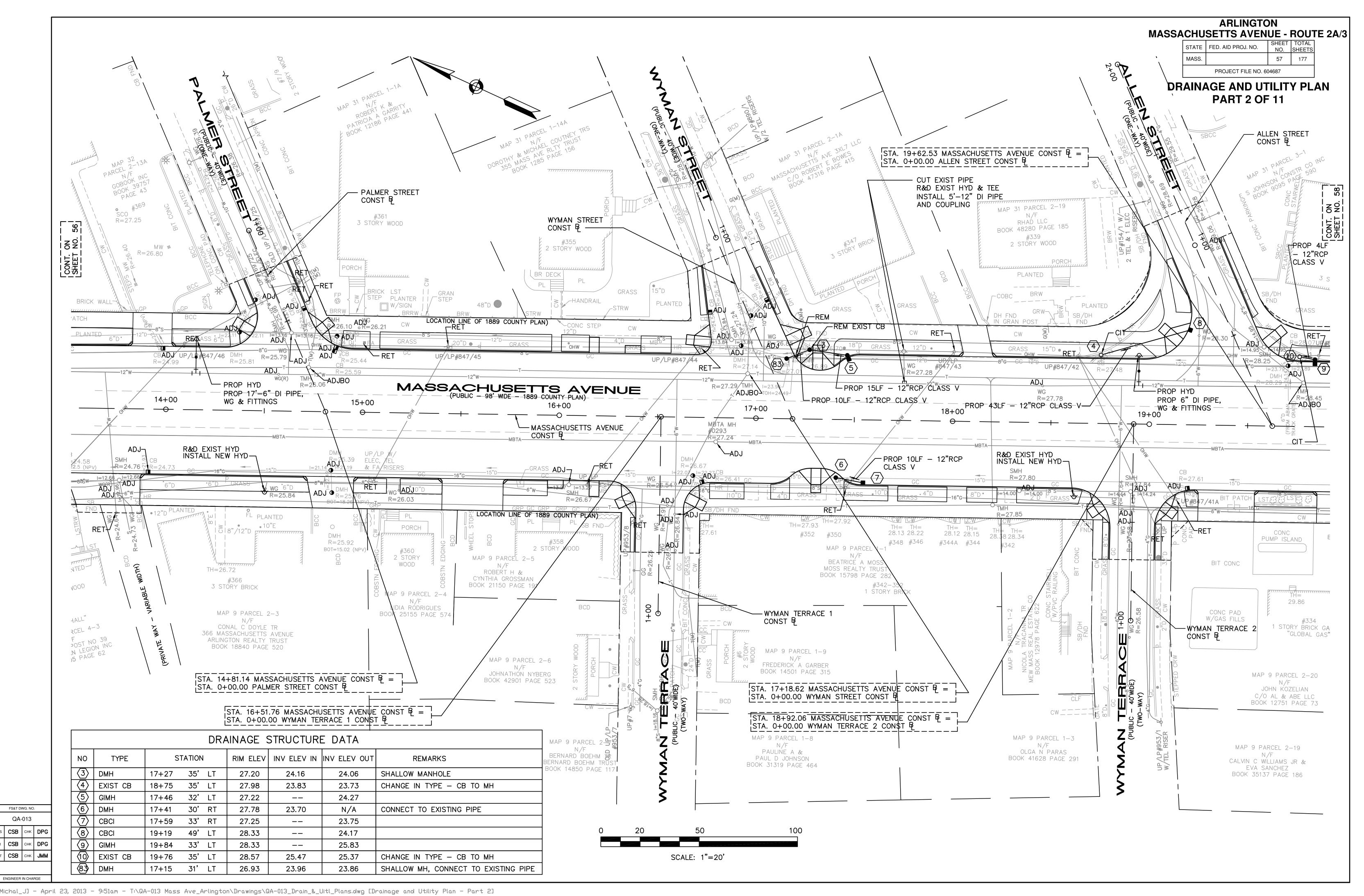


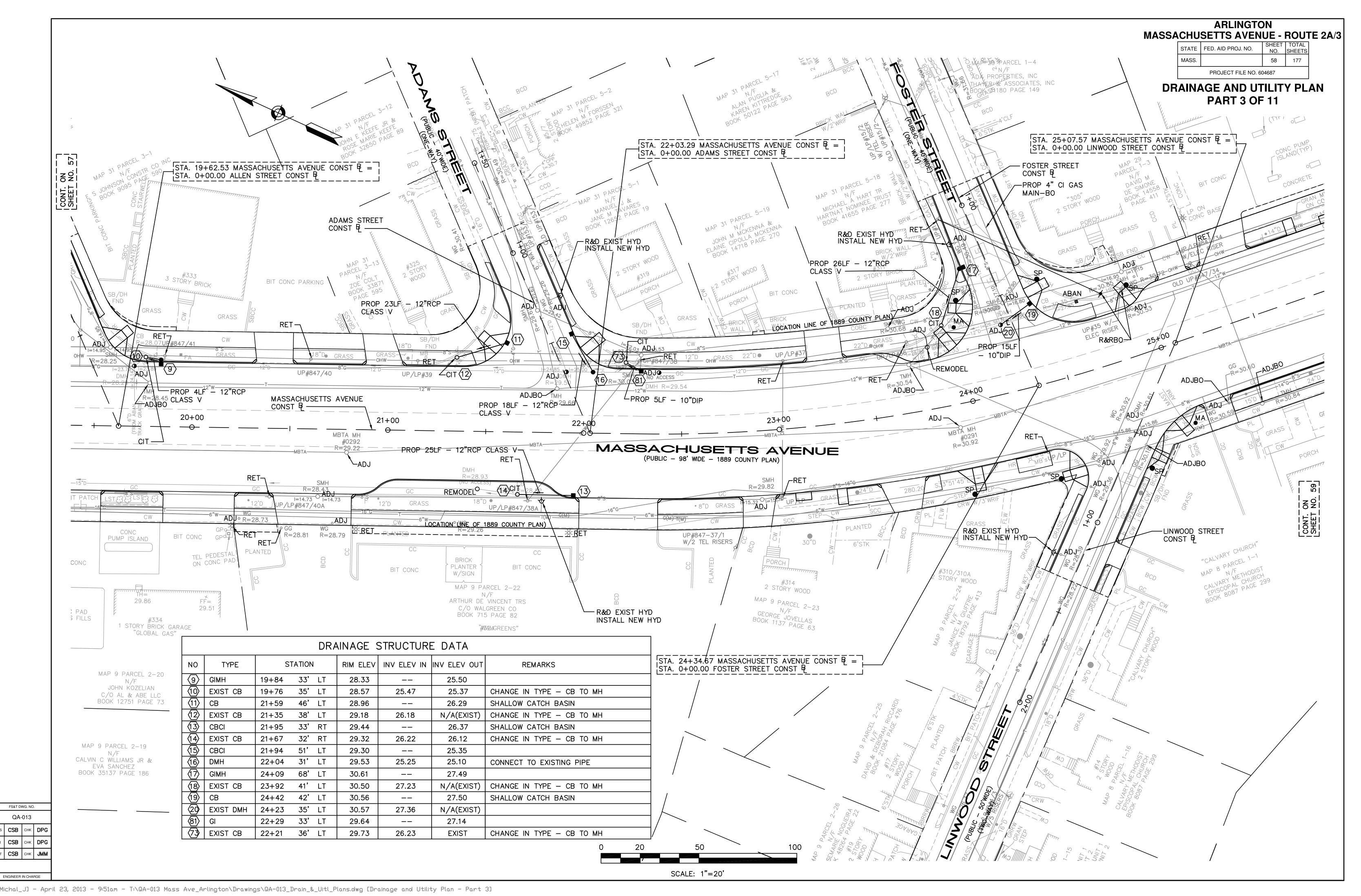


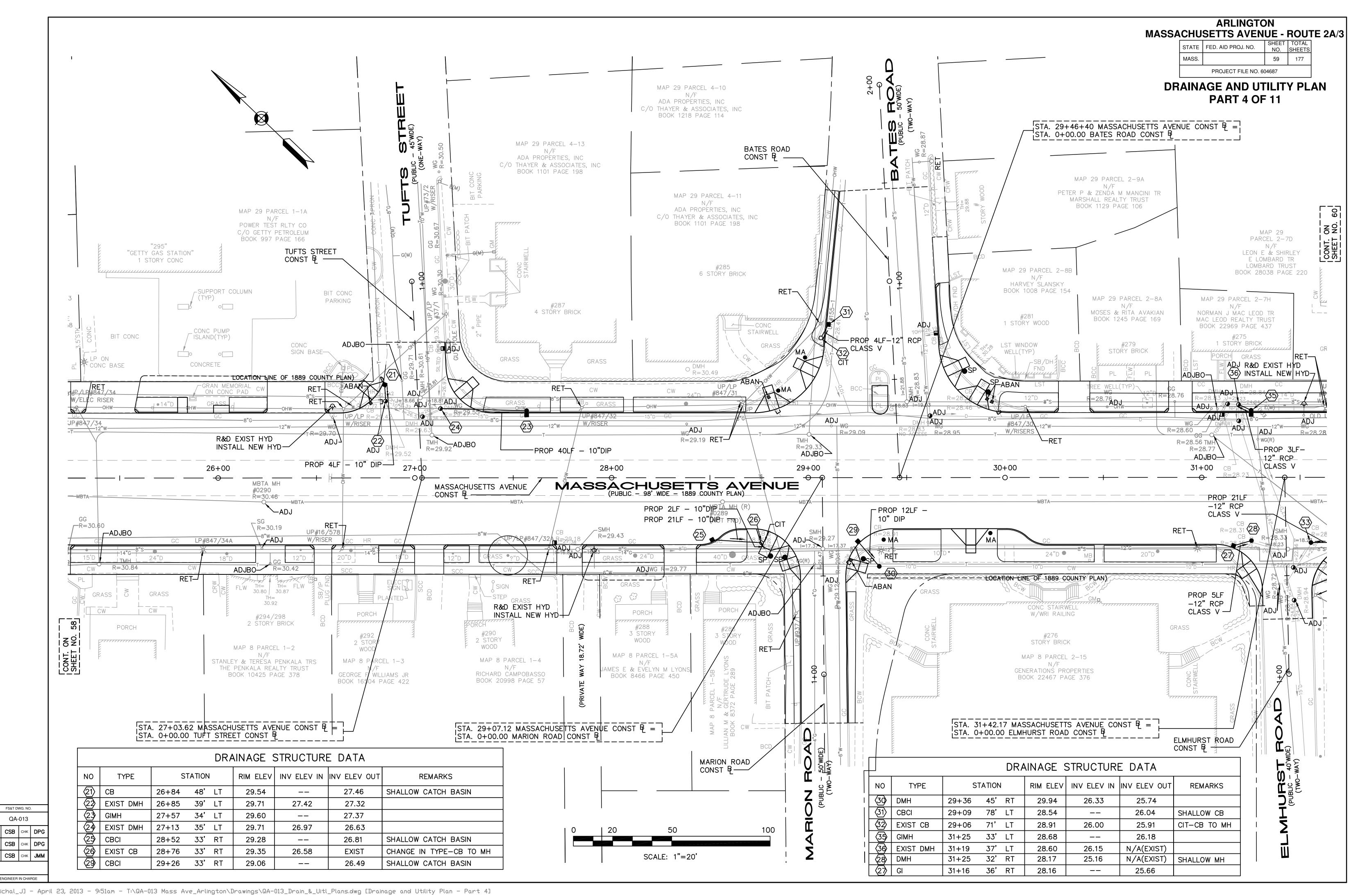


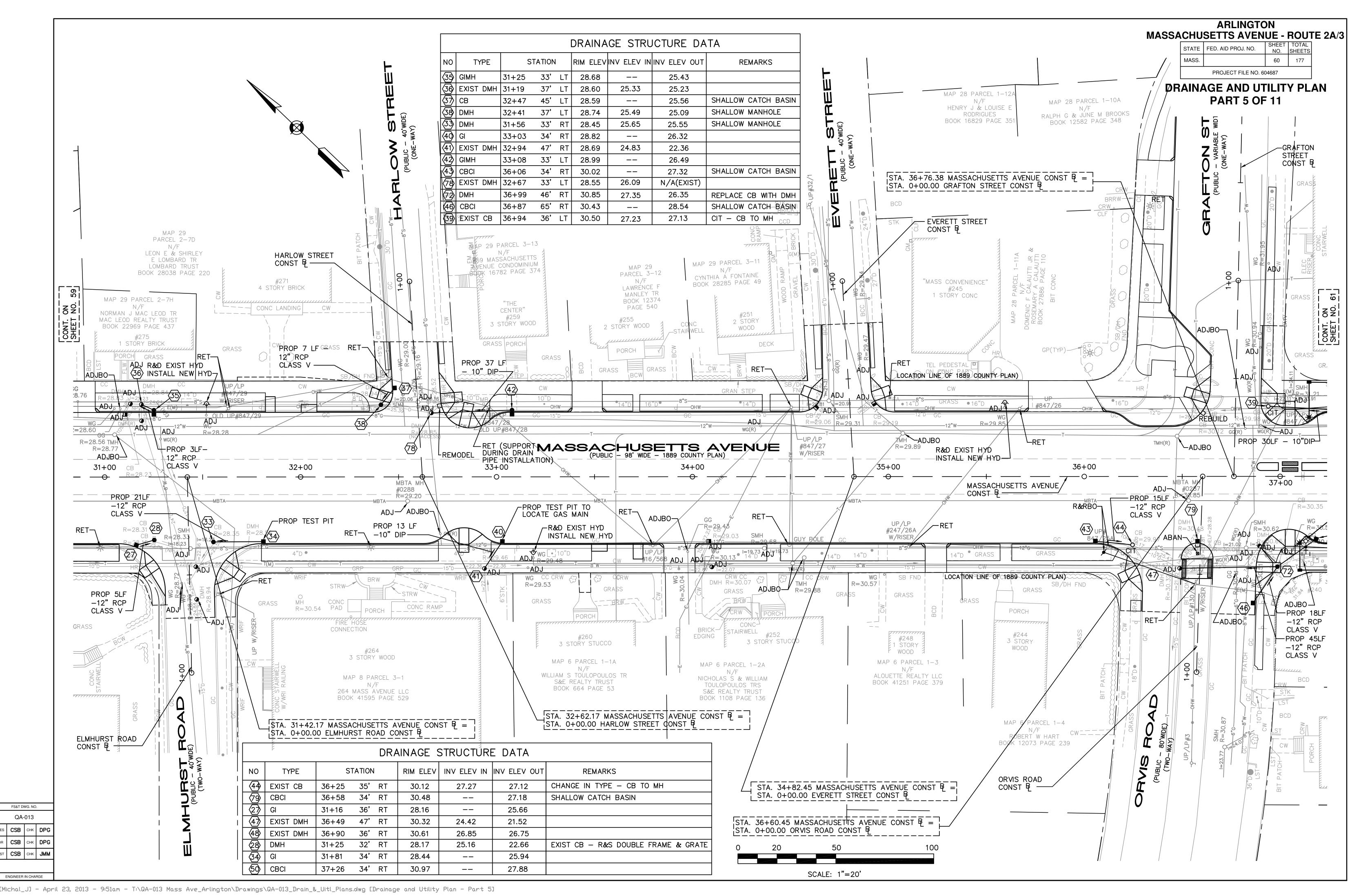


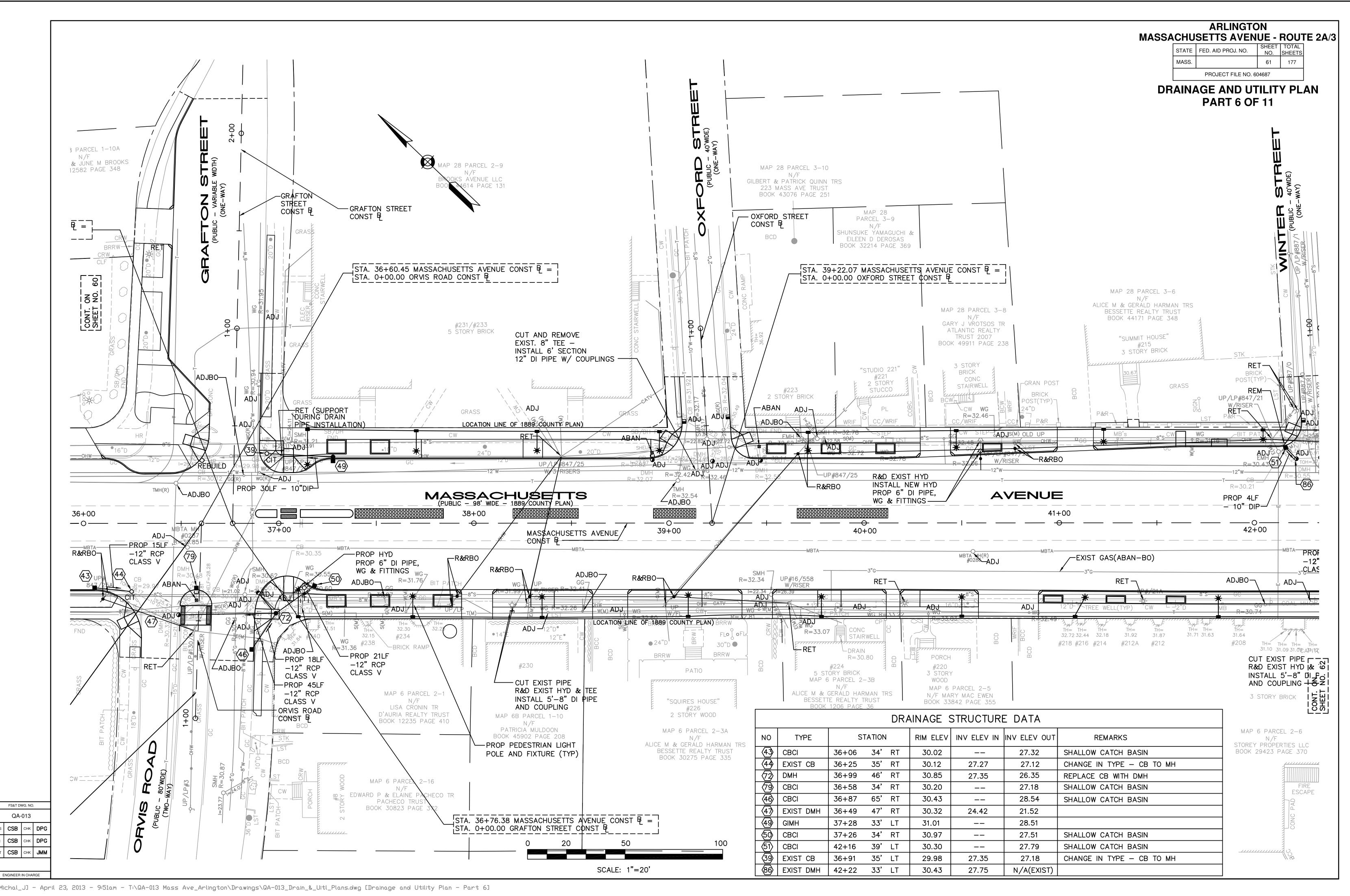


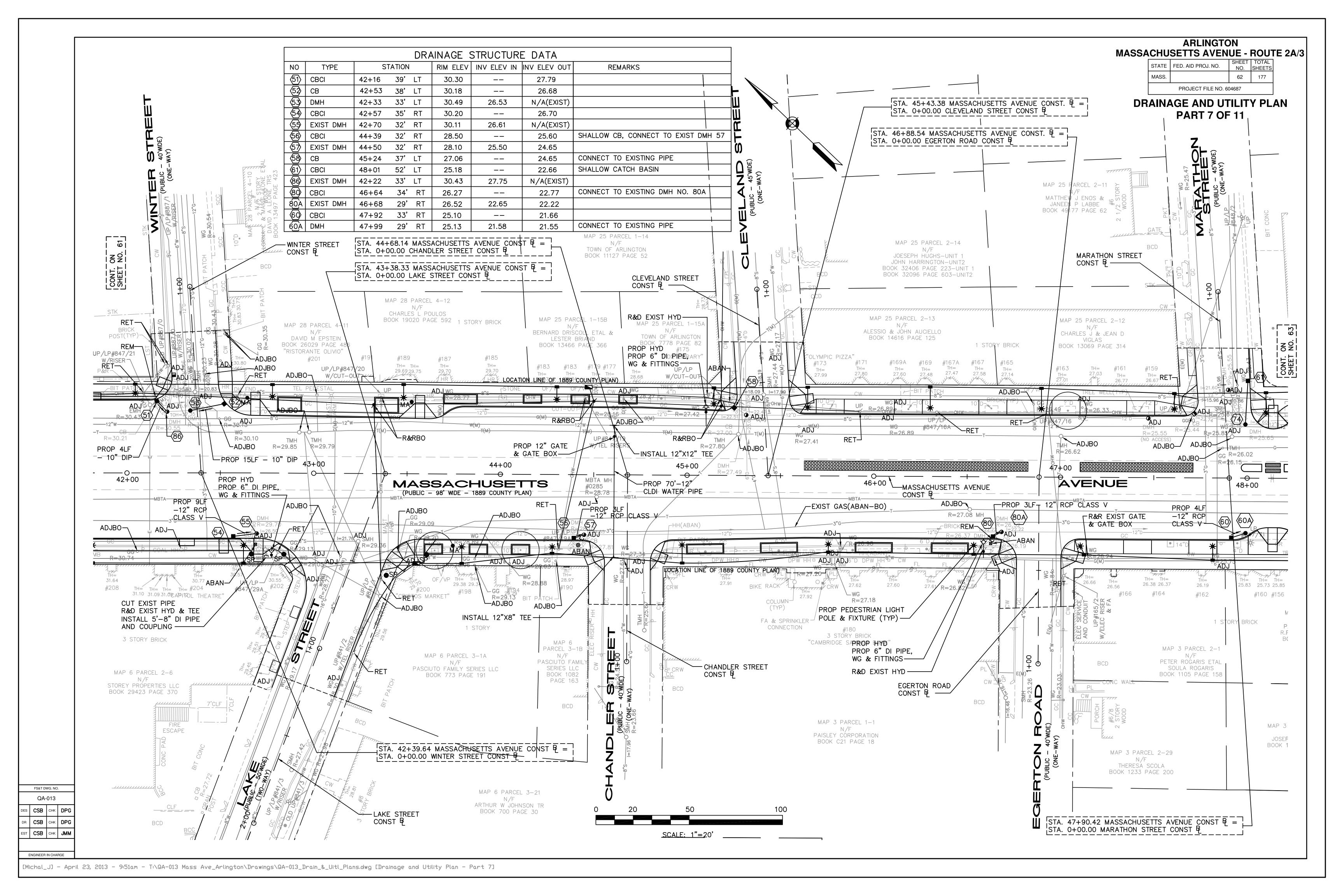


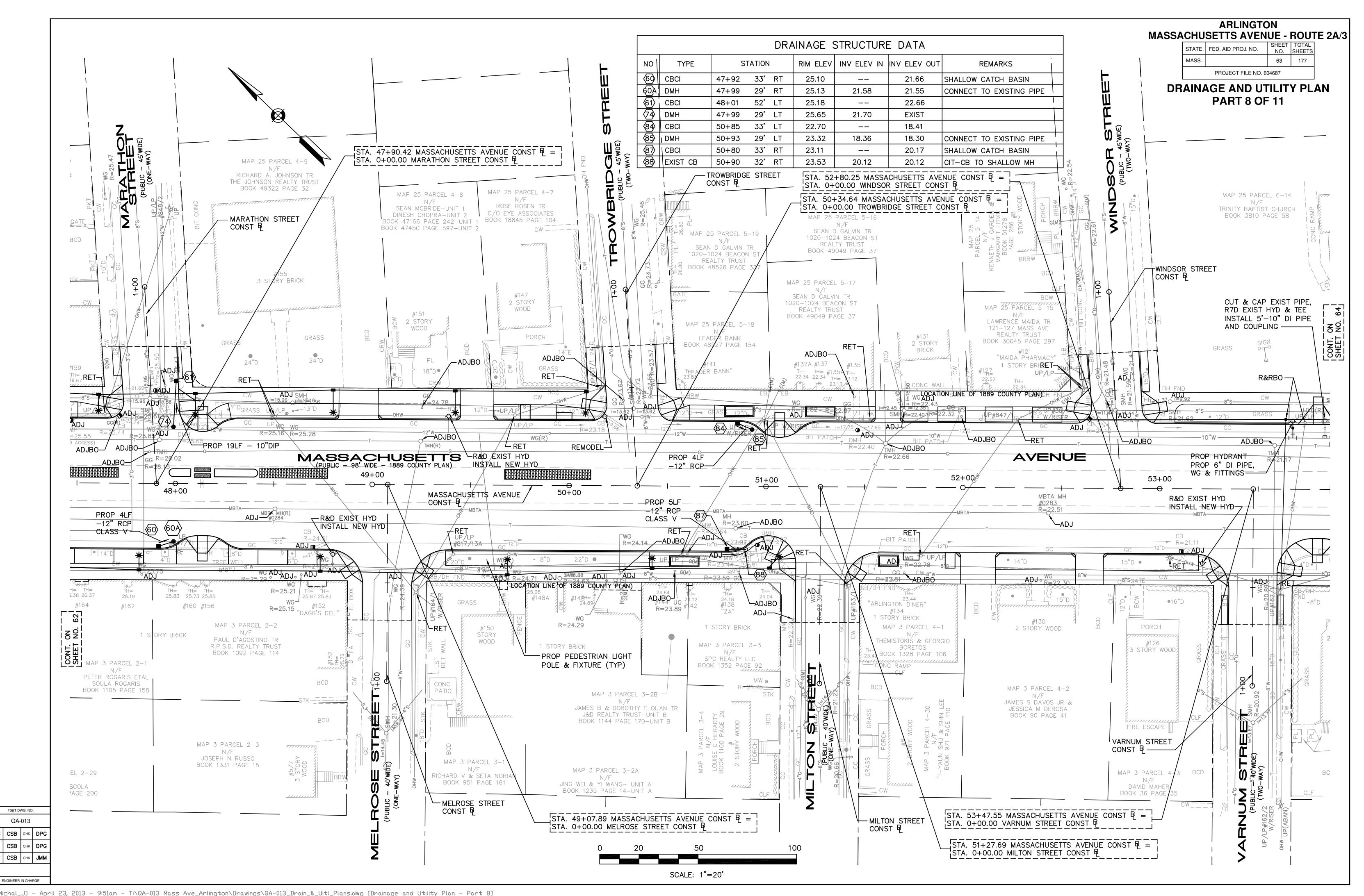


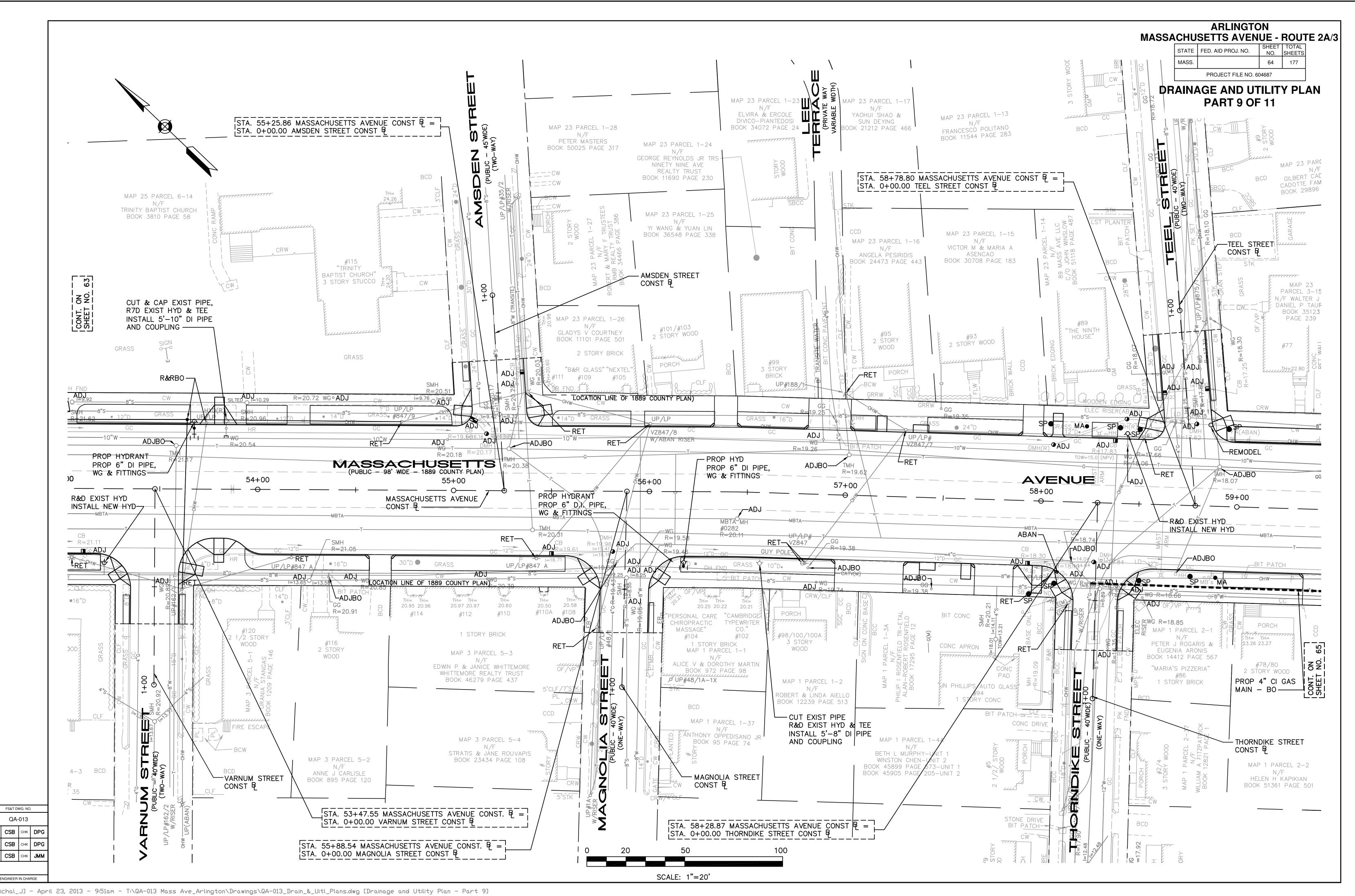


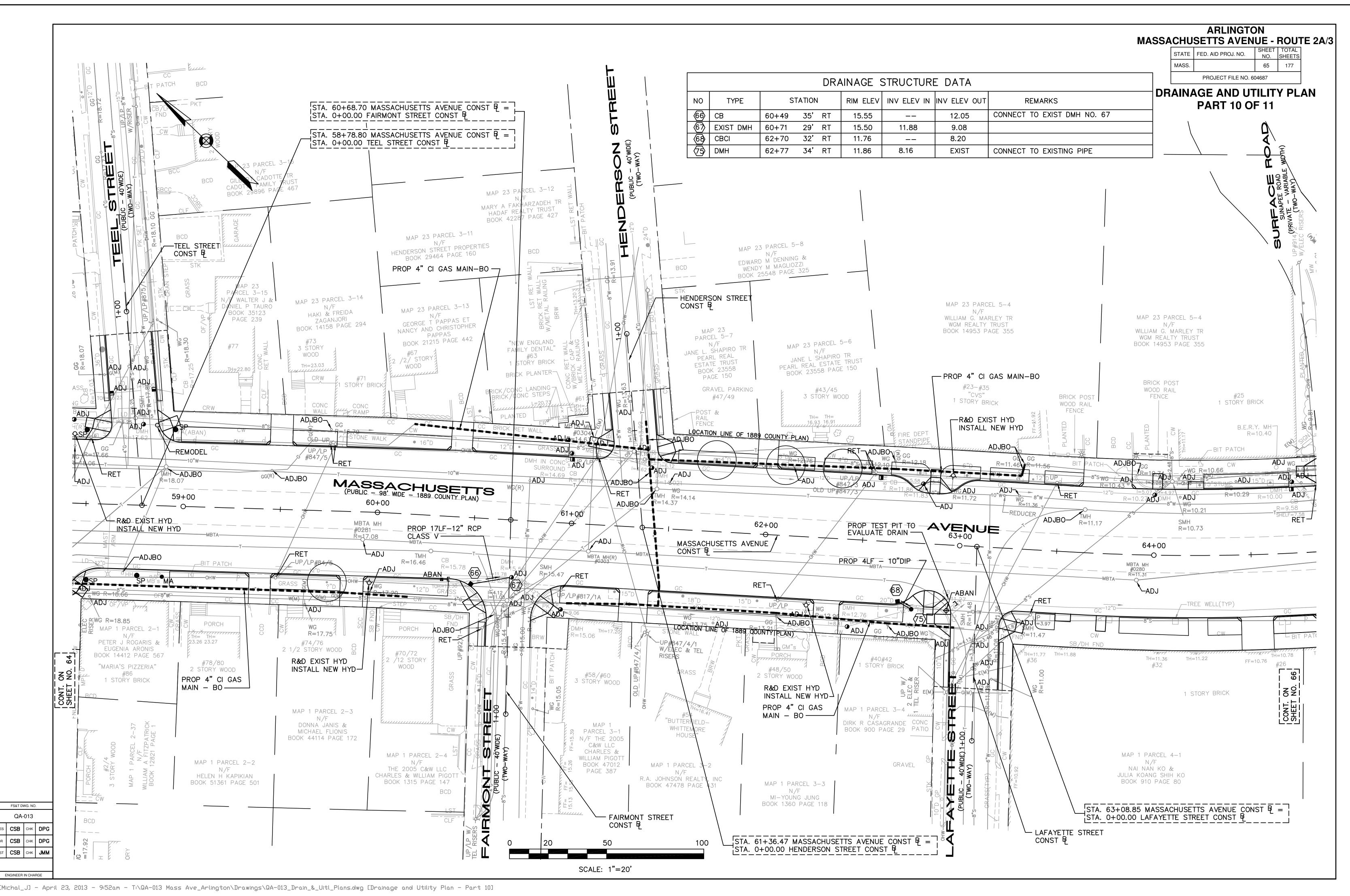


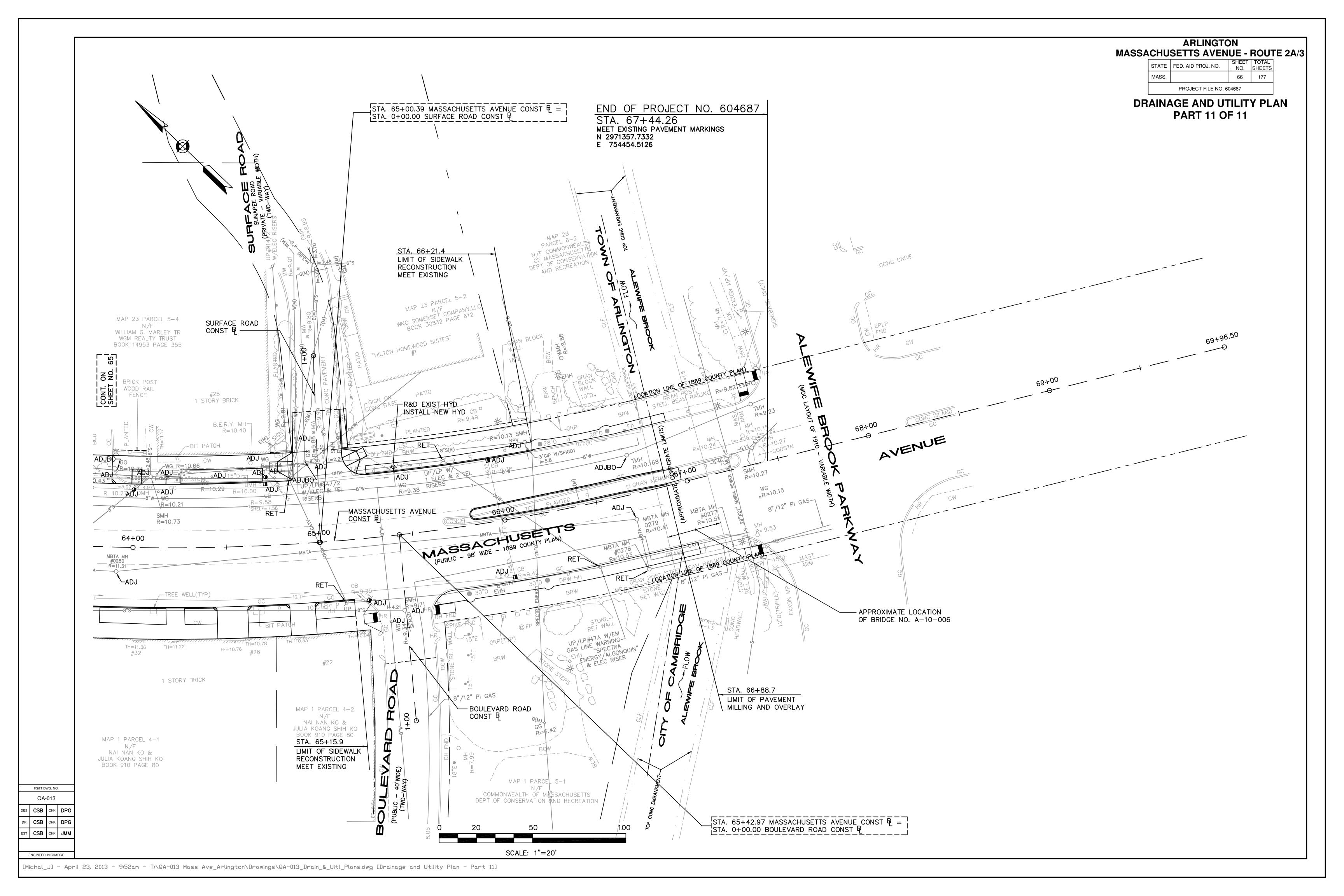


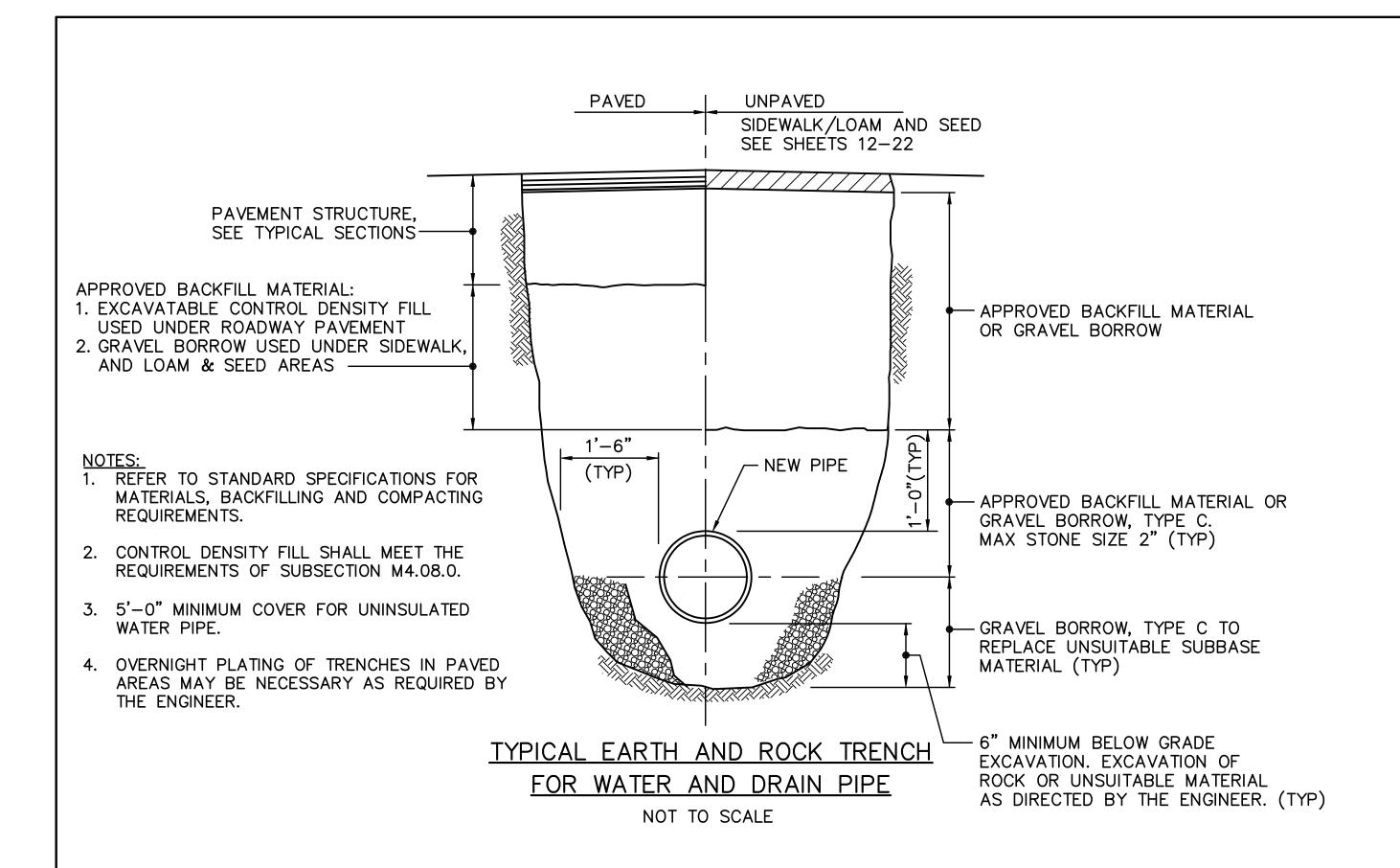


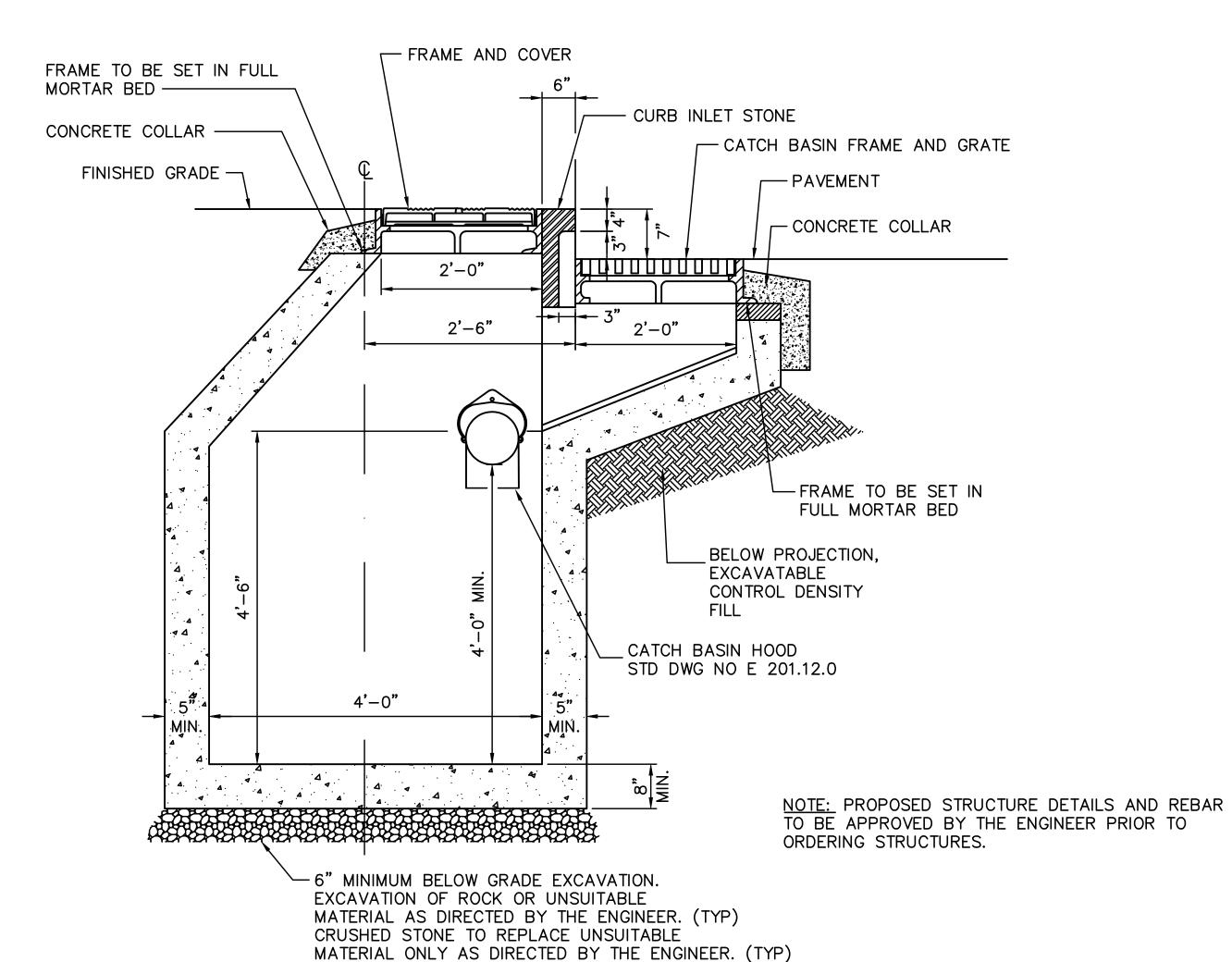








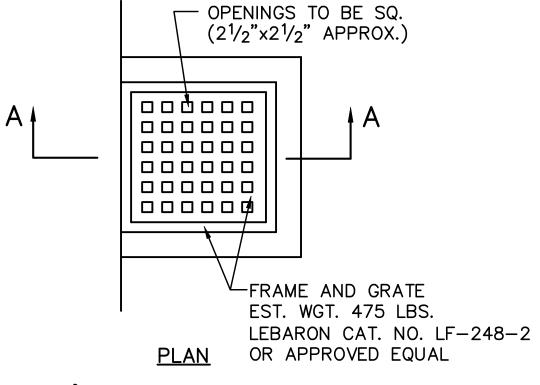




ARLINGTON **MASSACHUSETTS AVENUE - ROUTE 2A/3**

> SHEET TOTAL NO. SHEETS STATE FED. AID PROJ. NO. 67 177 PROJECT FILE NO. 604687

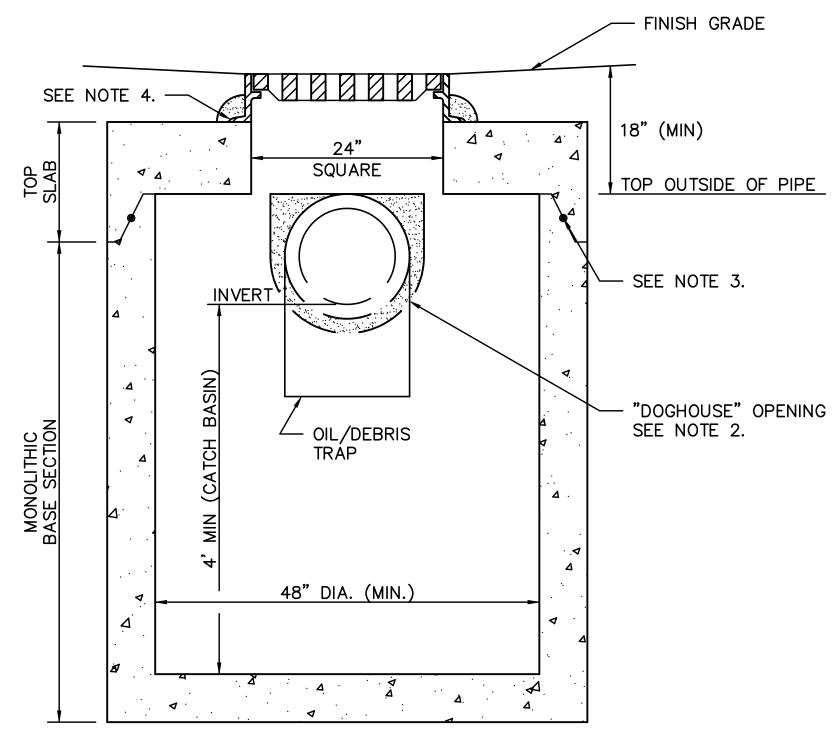
DRAINAGE AND UTILITY DETAILS



┌ FLANGE-3 SIDES ONLY

SECTION A-A

STANDARD MUNICIPAL CATCH BASIN



NOTES:

- 1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
- 2. PROVIDE DOGHOUSE OPENING FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. TOP SLAB SHALL NOT REST DIRECTLY ON PIPE. GROUT ALL PIPE CONNECTIONS (NON-SHRINK GROUT).
- 3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
- 4. CATCH BASIN FRAME AND GRATE OR MANHOLE FRAME AND COVER (6" DEPTH) SHALL BE SET IN FULL MORTAR BED.
- 5. ADJUST TO FINISH GRADE WITH MORTAR AS REQUIRED

SHALLOW CATCH BASIN/MANHOLE DETAIL

NOT TO SCALE

FS&T DWG. NO.

GUTTER INLET MANHOLE

NOT TO SCALE

ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS		
MASS.		68	177		
PROJECT FILE NO. 604687					

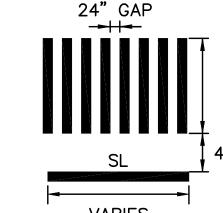
TRAFFIC LEGEND AND NOTES

BWLL	BROKEN	WHITE	LANE	LINE-6",	(10'	LANE	LINE,	30'	SPACE)

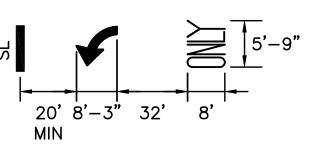
DWLL DOTTED WHITE LANE LINE-6", (2' LINE, 6' SPACE)

PAVEMENT MARKINGS - THERMOPLASTIC

- SOLID WHITE EDGE LINE-6"
- SOLID WHITE LINE
- SOLID WHITE LANE LINE-6"
- WHITE TRANSVERSE LINE-12", 15' O.C., 3:1 SLOPE
- DOUBLE YELLOW CENTER LINE-2-6" LINES
- DOTTED YELLOW LANE LINE-6", (2' LINE, 6' SPACE)
- SOLID YELLOW EDGE LINE-6"
- SOLID YELLOW LINE SYL
- YELLOW TRANSVERSE LINE-12", 15' O.C., 3:1 SLOPE
- STOP LINE, 12" WHITE LINE (SEE DETAIL BELOW)
- CROSSWALK, 24" WHITE LONGITUDINAL LINES (SEE DETAIL BELOW)
- TWO-WAY YELLOW/YELLOW SLOTTED PAVEMENT MARKER (40' SPACING TYP)
- ONE-WAY WHITE SLOTTED PAVEMENT MARKER (80' SPACING TYP)
- TWO-WAY YELLOW/RED SLOTTED PAVEMENT MARKER (20' SPACING TYP)
- EXISTING DIRECTION OF FLOW
- PROPOSED DIRECTION OF FLOW

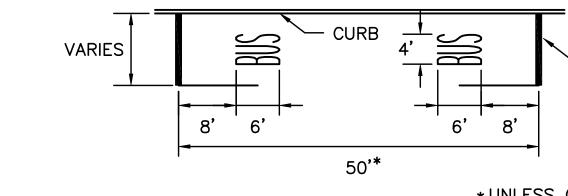


12' CROSSING MASSACHUSETTS AVE. 10' CROSSING SIDE STREET



TURN ARROW AND LEGEND NOT TO SCALE

CROSSWALK AND STOP LINE NOT TO SCALE

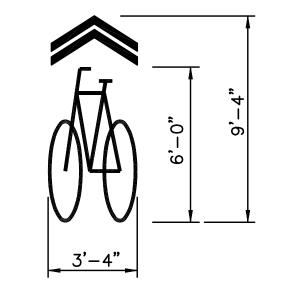


*UNLESS OTHERWISE NOTED ON THE PLANS BUS STOP NOT TO SCALE

20'

⊢ 2'**−**0"

(TYP)

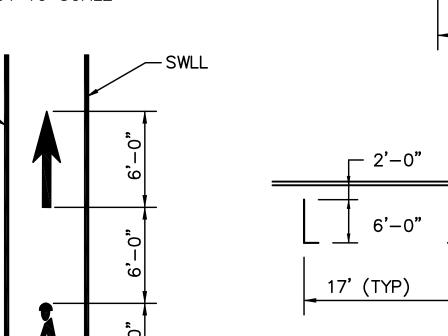


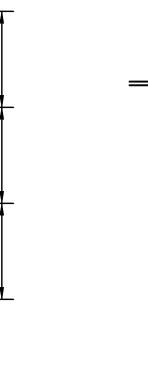
SHARED LANE MARKING NOT TO SCALE

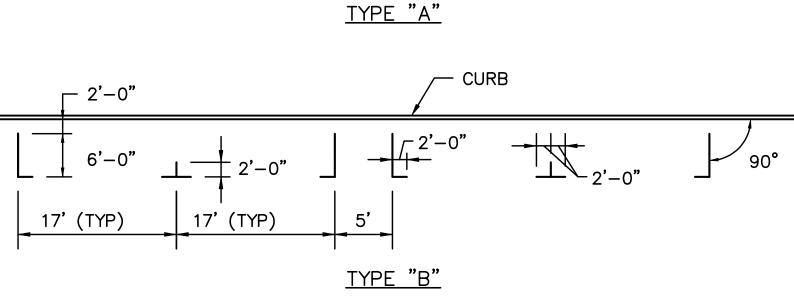
BIKE LANE MARKINGS

NOT TO SCALE

SWLL —







22' (TYP)

2'-0" 2'-0"

20'

PARKING STALL MARKINGS NOT TO SCALE

NOTE: MARKINGS FOR ALL PARKING STALLS SHALL BE 4" SWL

STEADY YELLOW RIGHT ARROW STEADY GREEN RIGHT ARROW FLASHING INDICATION (COLOR NOTED)

WALK - LUNAR WHITE

STEADY CIRCULAR RED

STEADY CIRCULAR YELLOW

STEADY CIRCULAR GREEN

STEADY RED LEFT ARROW

STEADY YELLOW LEFT ARROW

STEADY GREEN LEFT ARROW

STEADY RED RIGHT ARROW

STEADY GREEN VERTICAL ARROW

FLASHING DON'T WALK - PORTLAND ORANGE

DON'T WALK - PORTLAND ORANGE

NOTE:

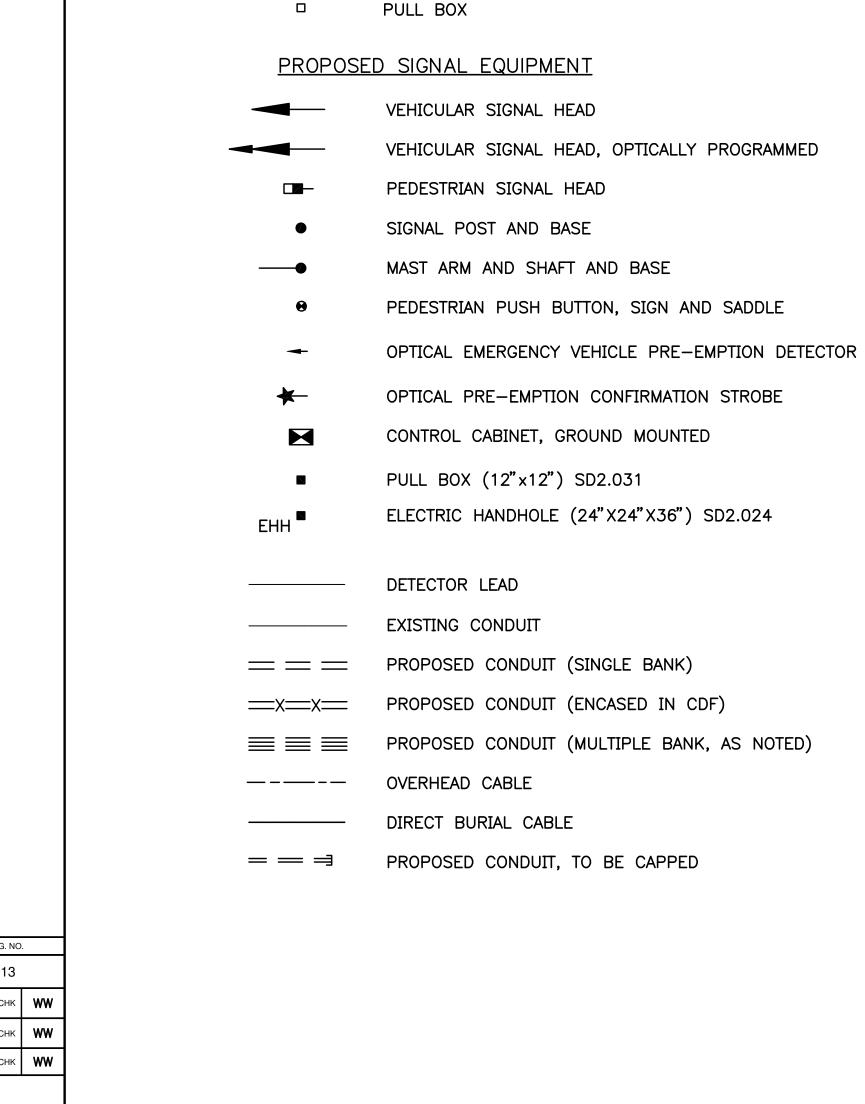
THE FOLLOWING LABELS MAY BE USED TO DENOTE EXISTING CONDITIONS OR PROPOSED CHANGES TO EXISTING CONDITIONS:

(ABAN)	TO	BE	ABANDONE
(,			

- (ADJ) ADJUST TO GRADE
- (EXIST) **EXISTING**
- (MOD) MODIFY
- (NIC) NOT IN CONTRACT
- (PM) EXISTING POLE-MOUNTED SIGN
- (PROP) PROPOSED
- (R&D) REMOVE AND DISCARD
- REMOVE AND RESET (R&R)
- REMOVE AND STACK (R&S)
- (REM) REMOVE
- (RET) RETAIN

GENERAL NOTES:

- 1. FINAL LOCATION OF ALL TRAFFIC CONTROL DEVICES SHALL BE AS REQUIRED BY THE ENGINEER. OFFSETS LISTED ARE APPROXIMATE ONLY.
- THE CONTRACTOR SHALL HOLD A MINIMUM CLEARANCE OF ONE FOOT BETWEEN ANY LOOP DETECTOR AND ANY EXISTING UTILITY COVER.
- ALL CONDUIT INSTALLED UNDER ROADWAYS SHALL BE ENCASED AS NOTED ON THE PLANS.
- CENTER OF SHARED LANE MARKINGS SHALL BE LOCATED 12 FEET FROM EDGE OF ROAD WHEN ADJACENT TO ON-STREET PARKING LANES OR BUS STOPS. WHERE NO PARKING LANES EXIST, CENTER OF SHARED LANE MARKINGS SHALL BE LOCATED 4 FEET FROM EDGE LINE, OR EDGE OF ROAD IF NO EDGE LINE PRESENT.
- PLACEMENT OF LONGITUDINAL LINES OF CROSSWALK SHALL AVOID VEHICLE AND BICYCLE WHEEL PATHS.



ELECTRIC MANHOLE (NUMBER AS NOTED)

ELECTRIC PULL BOX (12"x12") SD2.031

SP

 $\langle XX \rangle$

 $\overline{}$

SIGNAL POST

MAST ARM

LIGHT POST

EXISTING SIGNAL EQUIPMENT

JOINT USE POLE

CONTROLLER CABINET

ELECTRIC HAND HOLE

PULL BOX LOCATION

VEHICULAR SIGNAL HEAD

PEDESTRIAN SIGNAL HEAD

PEDESTRIAN PUSH BUTTON

MAST ARM AND SHAFT AND BASE

CONTROL CABINET, GROUND MOUNTED

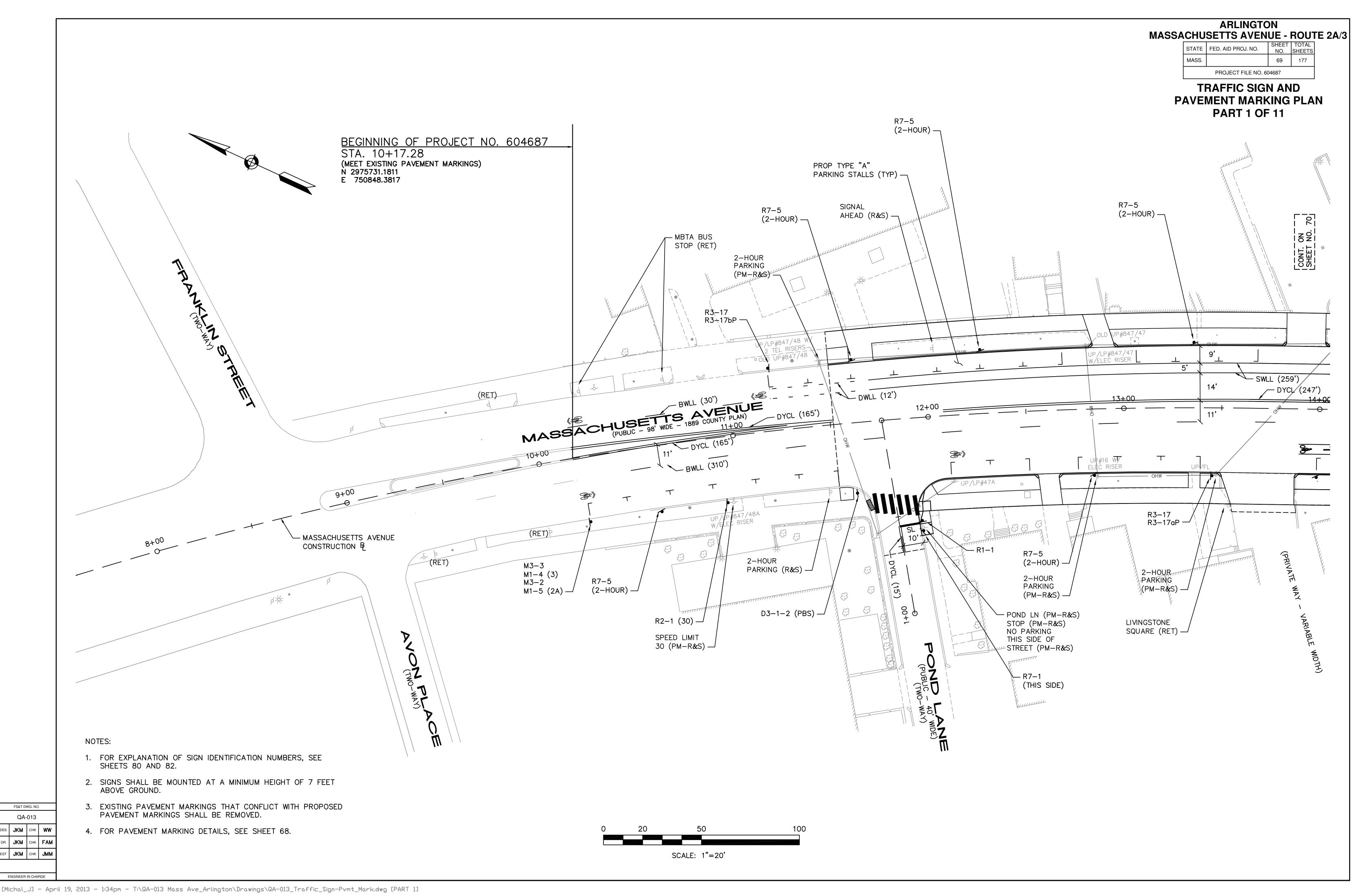
CONTROL CABINET, POST MOUNTED

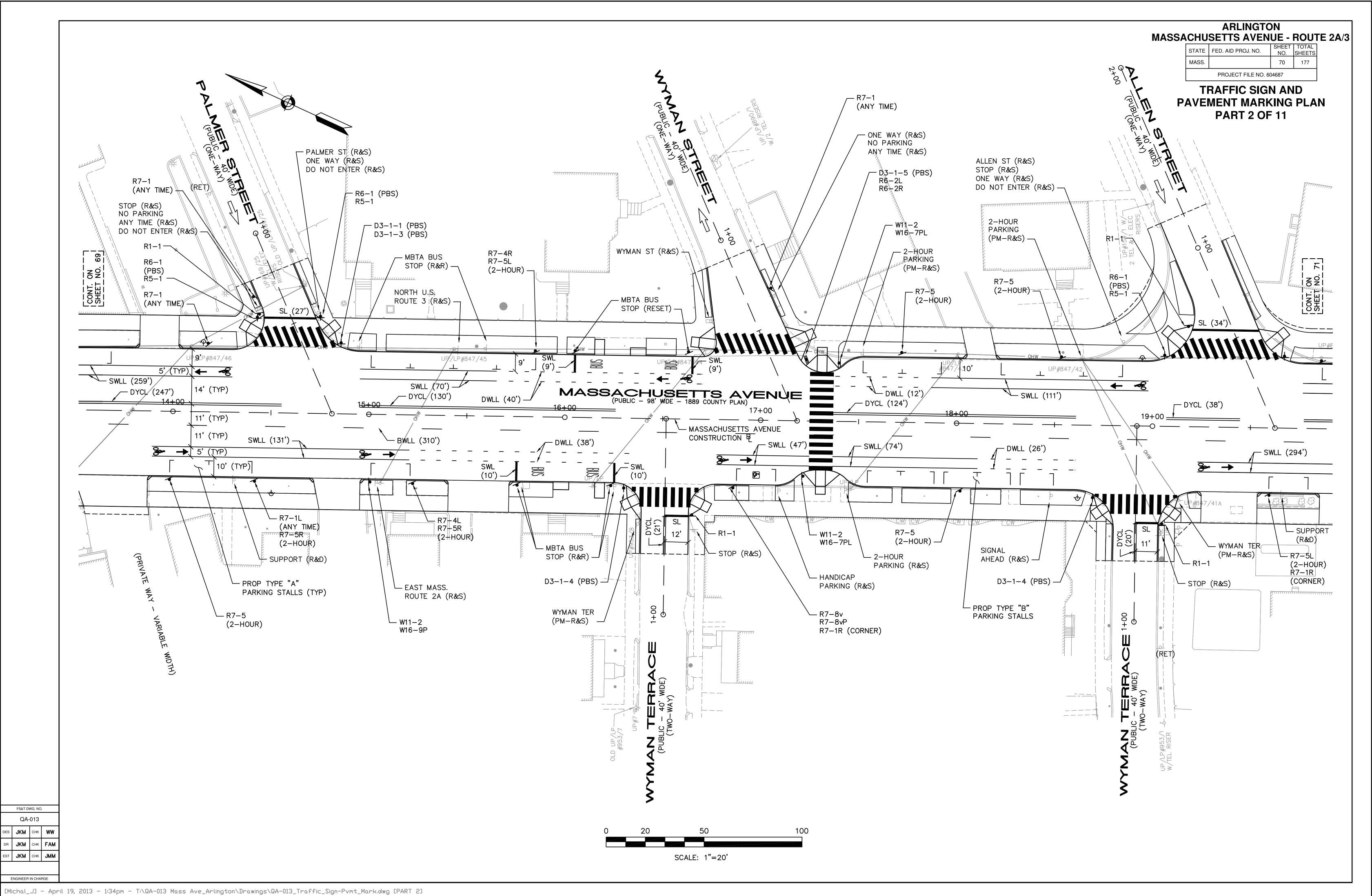
OPTICAL EMERGENCY VEHICLE PRE-EMPTION DETECTOR

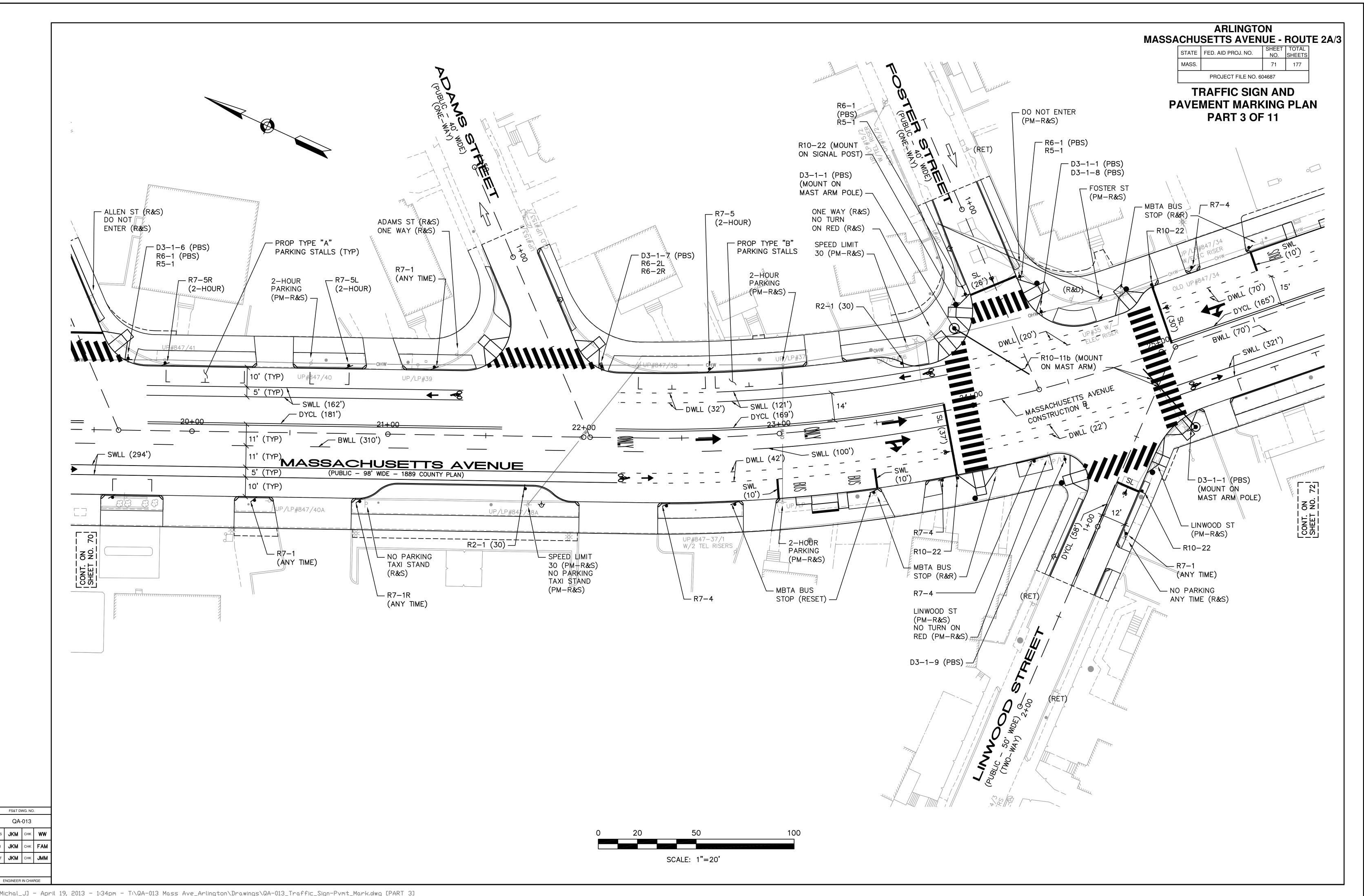
SIGNAL POST AND BASE

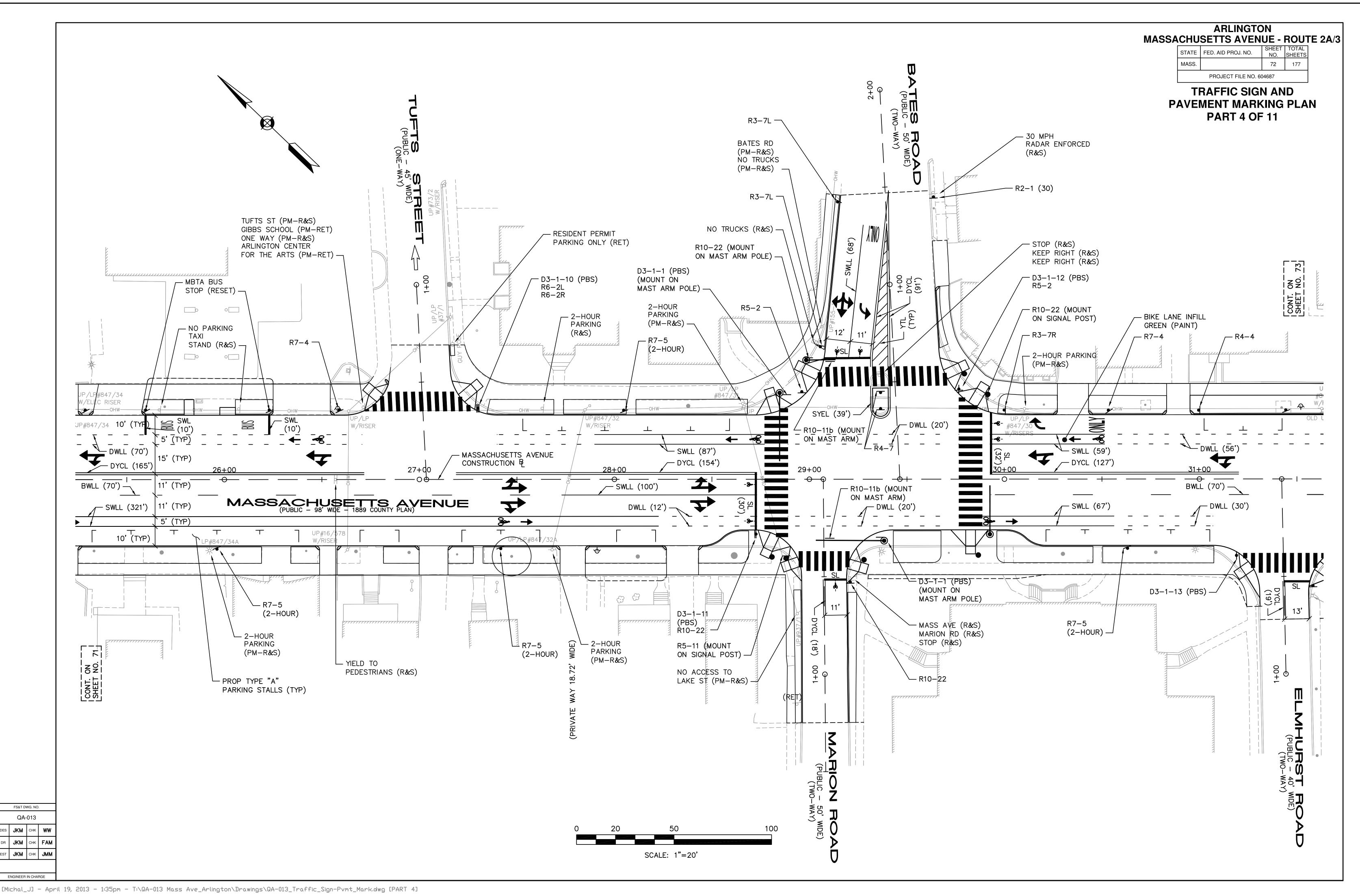
TELEPHONE MANHOLE (NUMBER AS NOTED)

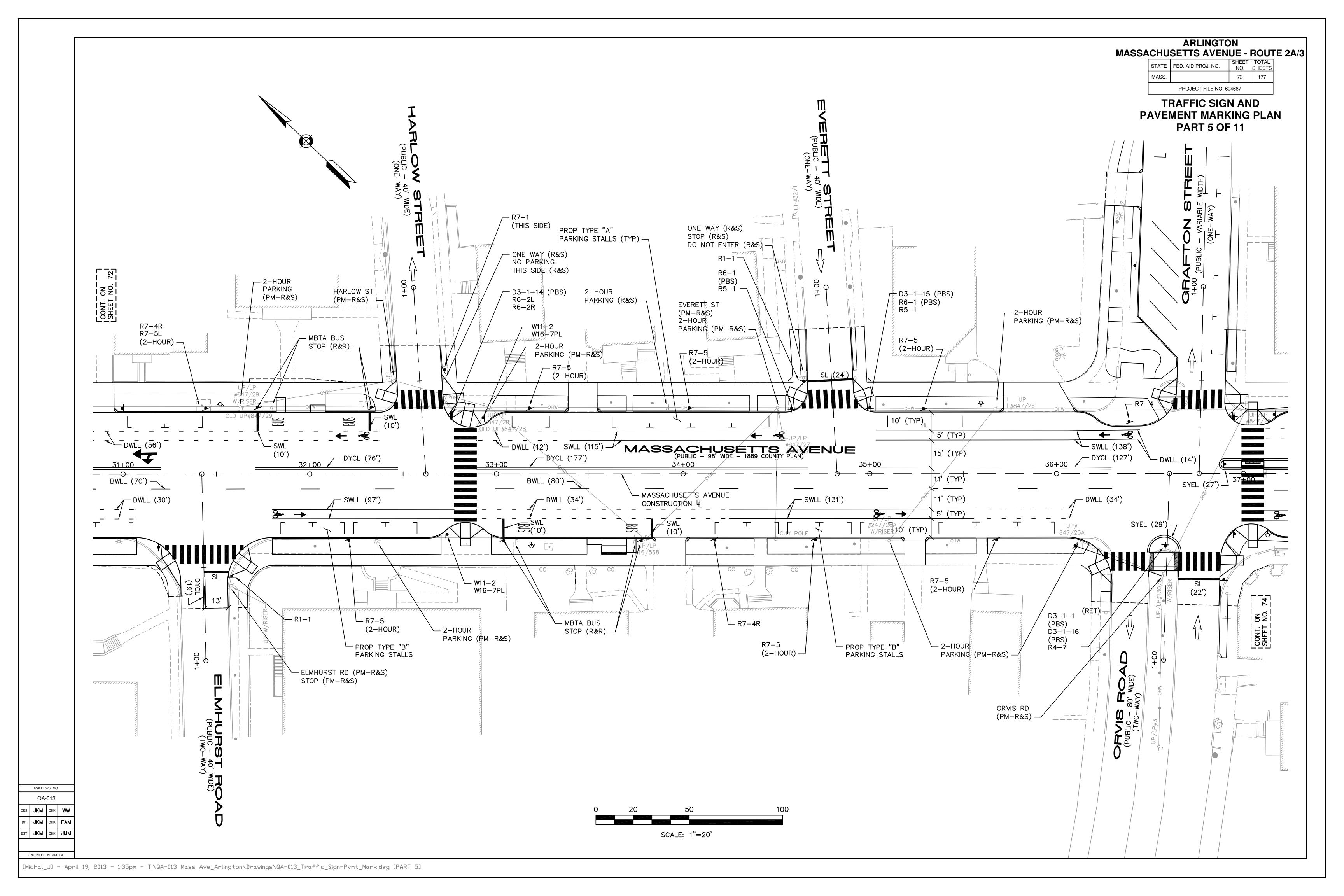
FS&T DWG. NO. QA-013 DES JKM CHK WW DR JKM CHK WW EST JKM CHK WW ENGINEER IN CHARGE

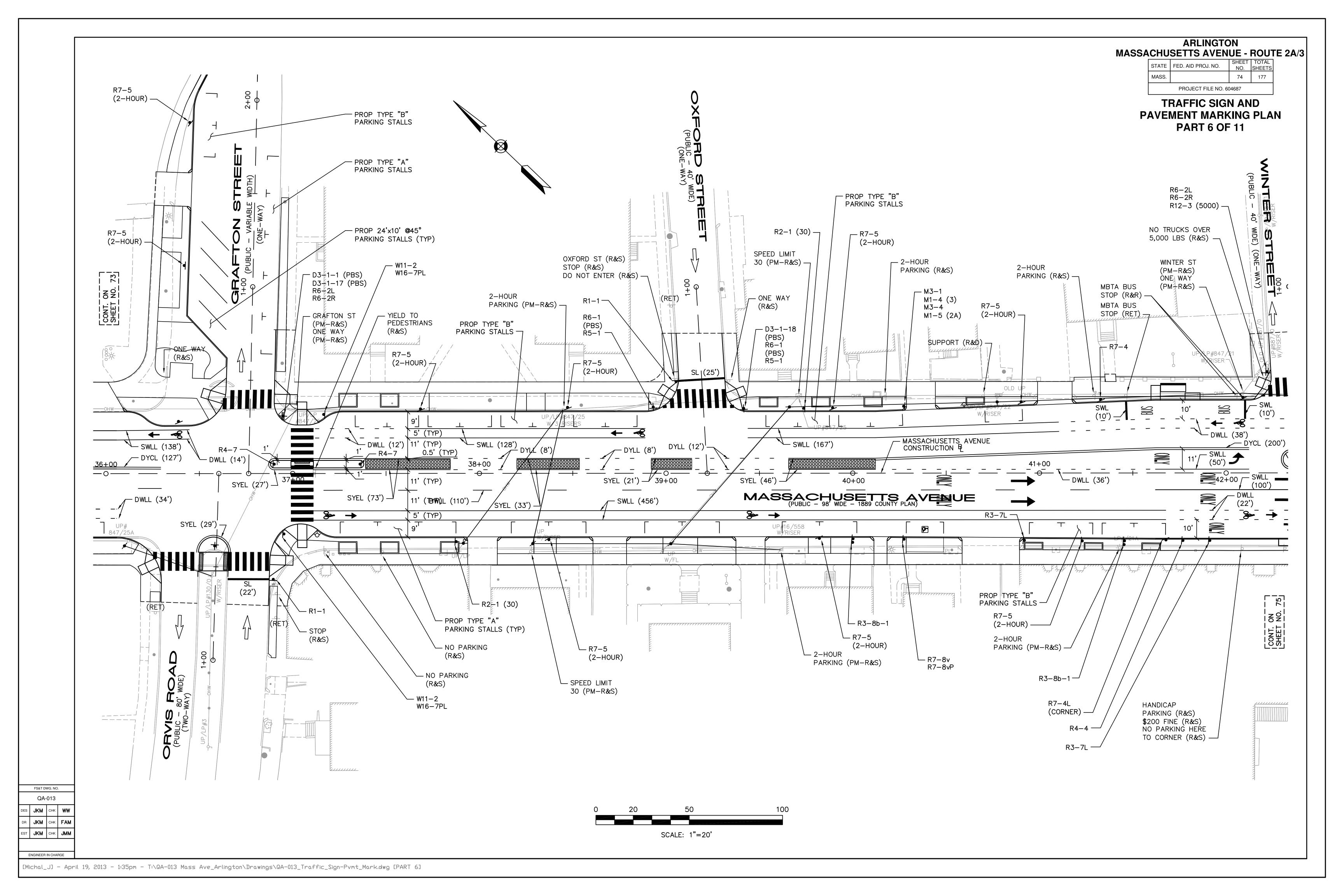


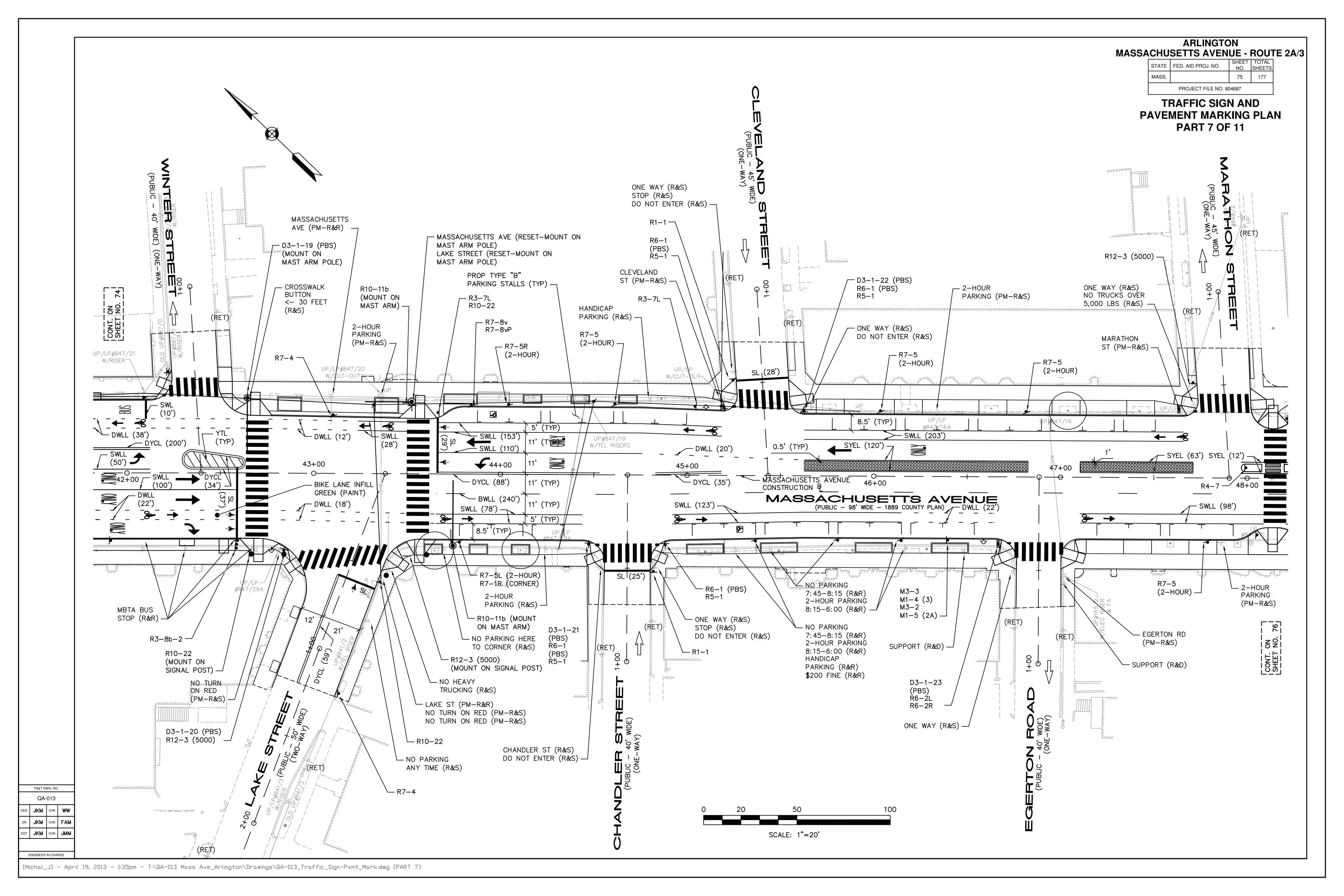


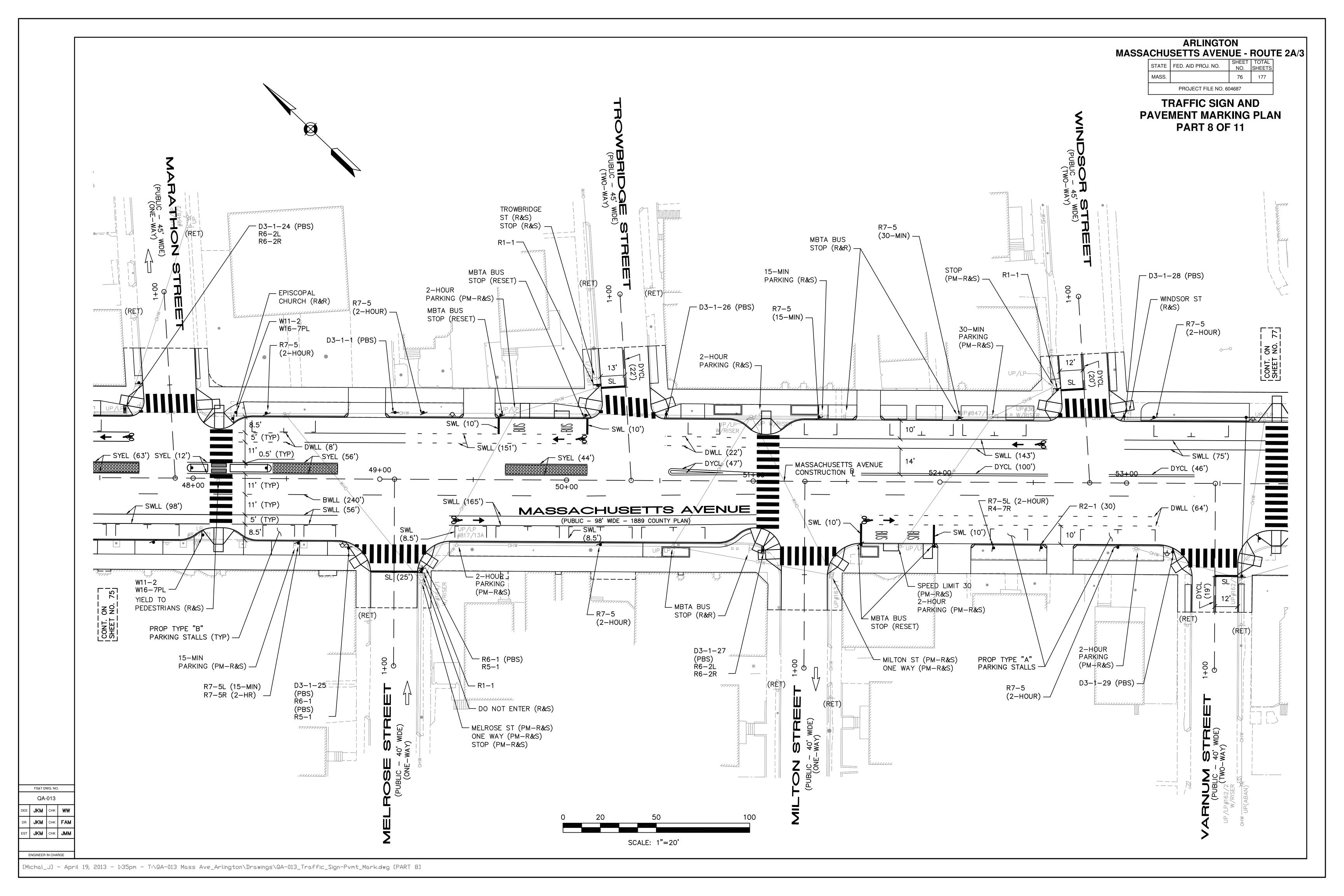


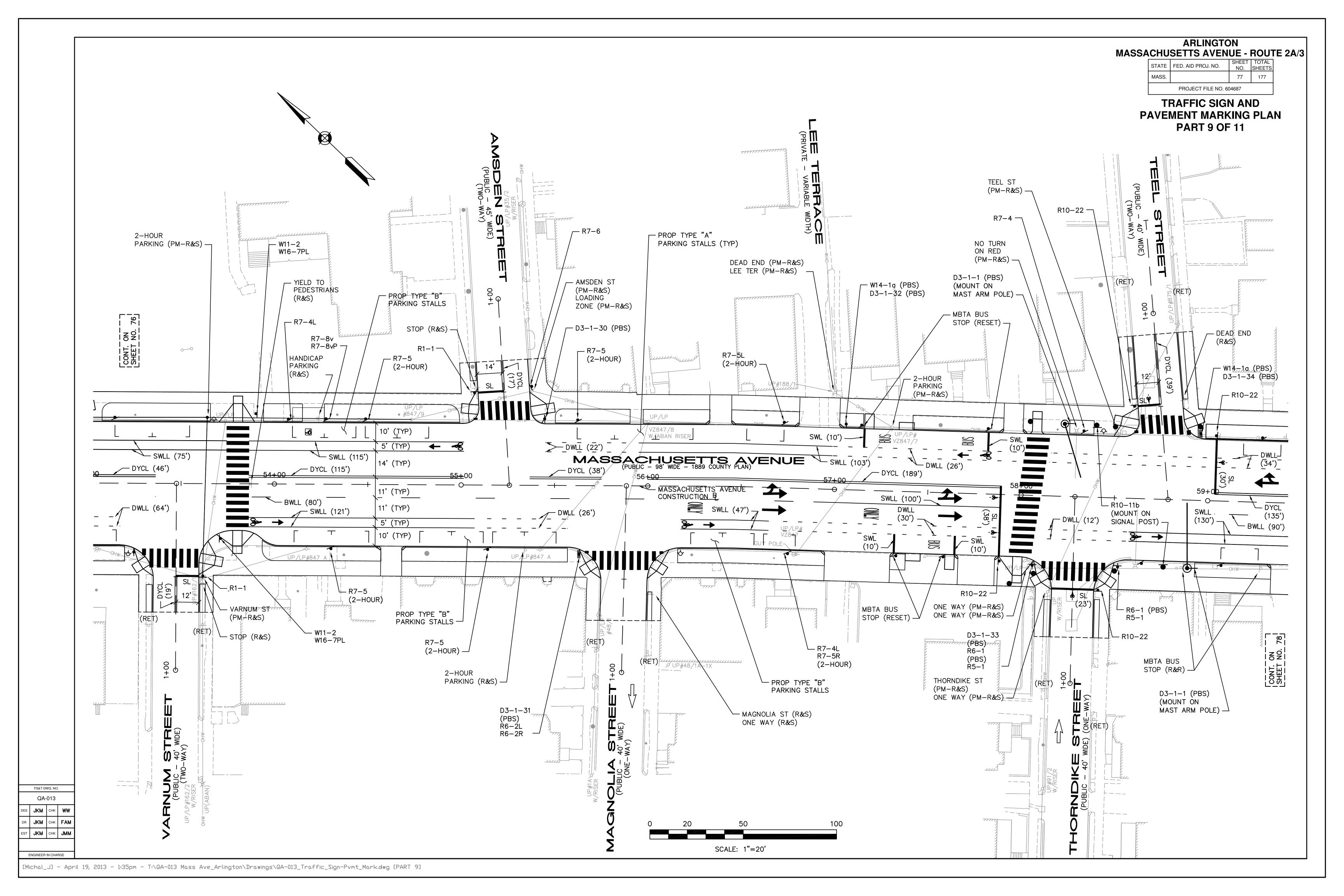


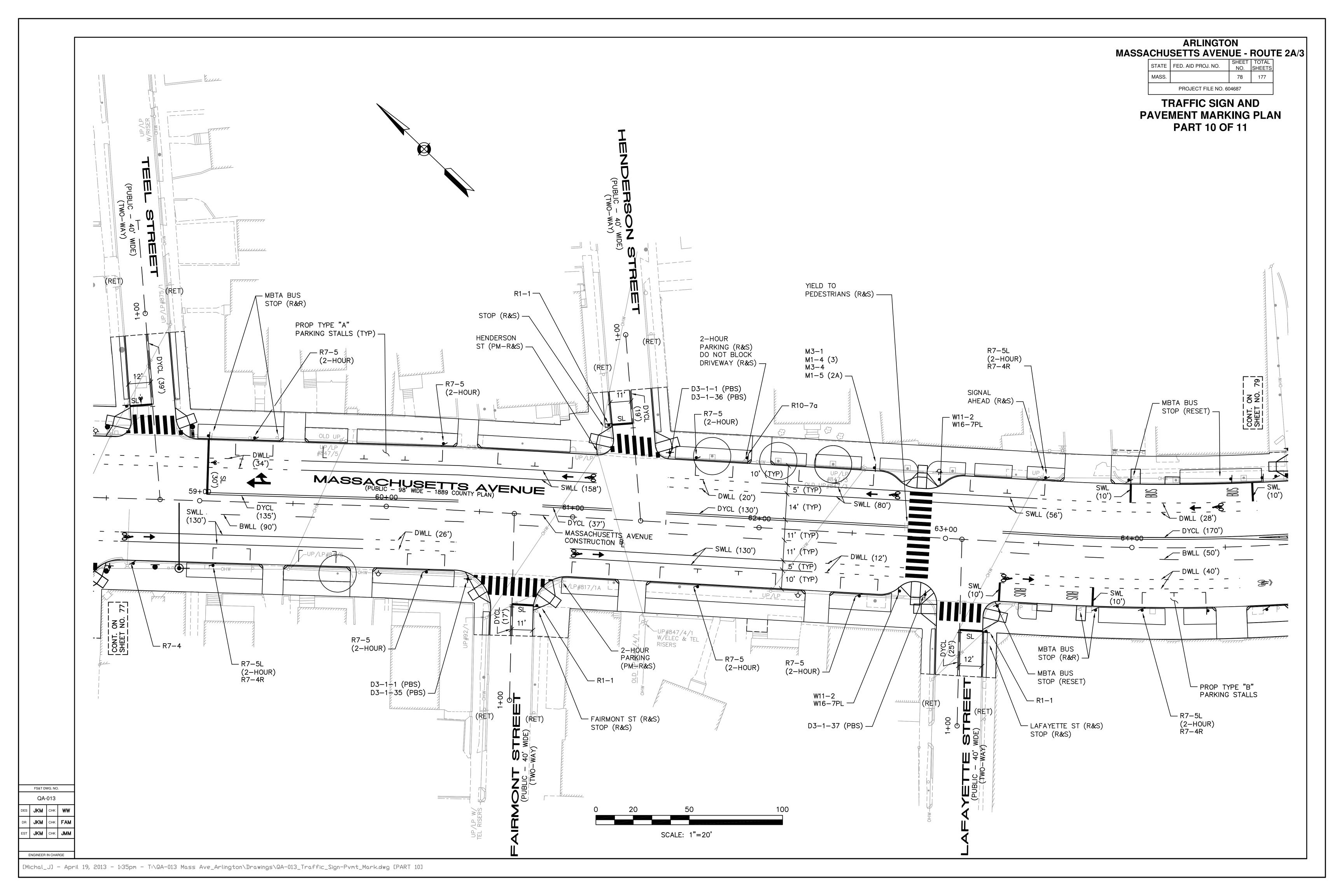


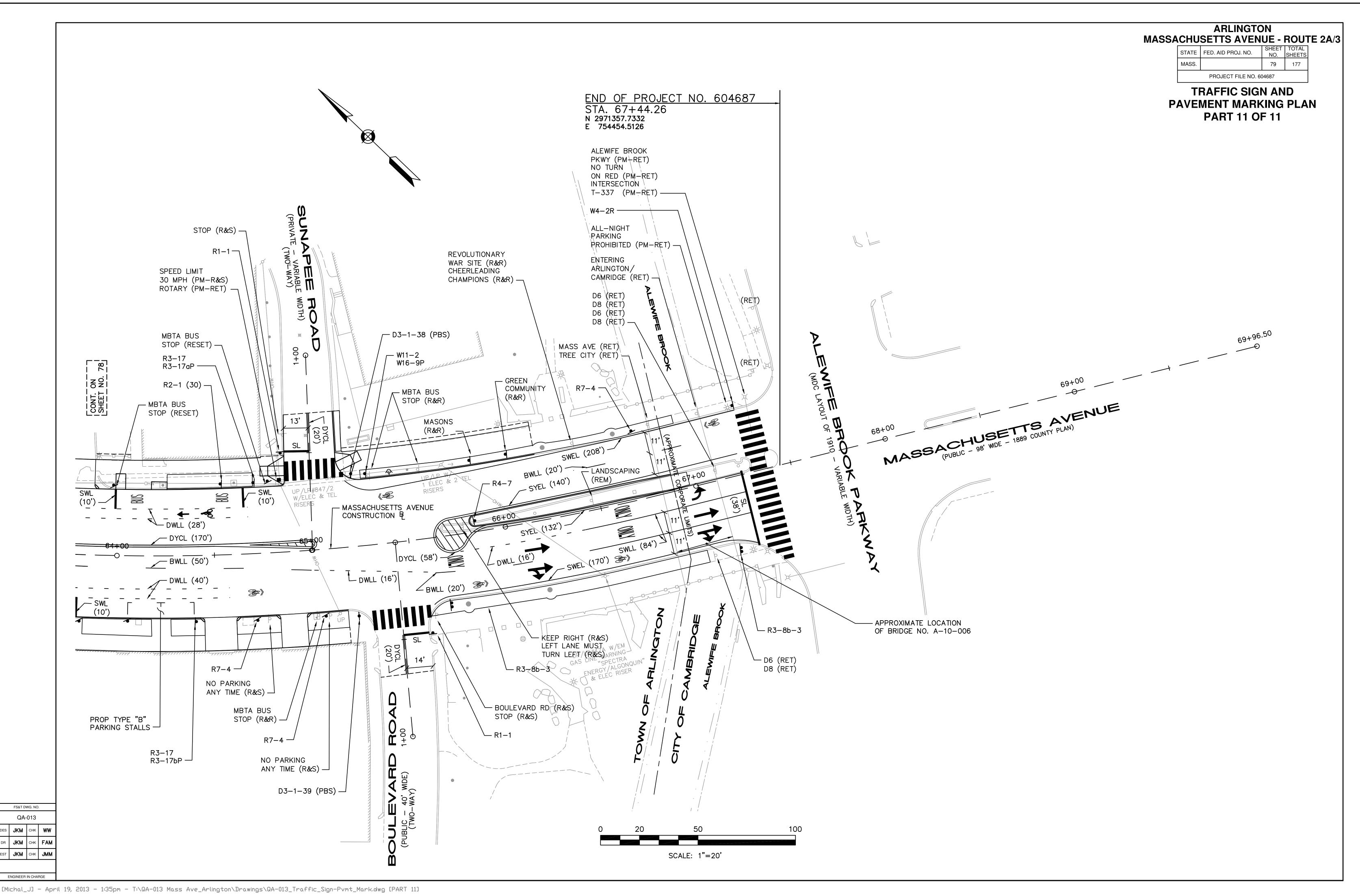












NOTE: ALL STOP AND YIELD SIGNS PROPOSED IN THIS CONTRACT ARE SUBJECT TO FIELD INVESTIGATION BY THE DISTRICT OFFICE OF THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION TO JUSTIFY WARRANTS BEFORE INSTALLATION. NUMERICAL LIMITS AND JUSTIFICATION FOR ALL SPEED LIMIT SIGNS WILL BE DETERMINED BY THE SPEED ZONING UNIT OF THE TRAFFIC ENGINEERING SECTION, MASSACHUSETTS DEPARTMENT OF TRANSPORTATION BEFORE FABRICATION AND/OR ERECTION.

NOTES:

1. SUPER HIGH INTENSITY UNMETALIZED MICROPRISMATIC ELEMENT REFLECTIVE SHEETING M9.30.0 TYPE VII, VIII, IX, OR X SHALL BE USED FOR ALL SIGNS.

- 2. PBS PRINT BOTH SIDES
- 3. THE BACK OF ALL ONE SIDED SIGNS SHALL BE PAINTED BLACK PRIOR TO INSTALLATION.

ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3

STATE FED. AID PROJ. NO. SHEET TOTAL NO. SHEETS MASS. PROJECT FILE NO. 604687

TRAFFIC SIGN SUMMARY SHEET 1 OF 3

	1		<u> </u>					_									INSTALLATION.				1				1	
IDENTIFI—	SIZE C	F SIGN	TEXT			MENSIC		NUMBER OF		COLOR		POST SIZE AND NUMBER REQUIRED	AREA IN SQUARE	IDENTIFI—	SIZE (OF SIGN	TEXT		DIMENS		NUMBER OF		COLOR		POST SIZE AND NUMBER REQUIRED	AREA IN SQUARE FEET
CATION NUMBER	WIDTH	HEIGHT		LETTER HEIGHT	VER SPA	TICAL ACING	ARROW	REQUIRE	BACK- GROUND	LEGEND	BORDER	NUMBER REQUIRED	SQUARE FEET	CATION NUMBER	WIDTH	HEIGHT		LETTER V HEIGHT S	ERTICAI SPACINO	ARROW	SIGNS REQUIRED G	BACK- SROUND	LEGEND	BORDER	NUMBER REQUIRED	FEET
R1-1	30"	30"	STOP	SEE MUTCD	S MU	SEE JTCD	SEE MUTCD	21	SEE MUTCD	SEE MUTCD	SEE MUTCD	1-P5 21	110.25	R6-1 (PBS)	36"	12"	ONE WAY	SEE MUTCD	SEE MUTCD	SEE MUTCD	18	SEE MUTCD	SEE MUTCD	SEE MUTCD	MOUNT 18 WITH R5-1	54.00
R2-1 (30)	24"	30"	SPEED LIMIT 30					8				1–P5 8	40.00	R6-2L	12"	18"	ONE WAY				10				1-P5 9 MOUNT 1 WITH D3-1-1	15.00
R3-7L	36"	36"	LEFT LANE MUST TURN LEFT					6				1-P5 5 MOUNT 1 WITH R10-22	54.00	R6-2R	12"	18"	ONE WAY				10				MOUNT 9 WITH R6-2L MOUNT 1 WITH D3-1-1	15.00
R3-7R	36"	36"	RIGHT LANE MUST TURN RIGHT					1				1-P5 1	9.00	R7-1 (ANY TIME)	12"	18"	NO PARKING ANY TIME				6				1–P5 6	9.00
R3-8b-1	60"	30"	ONLY ONLY ONLY ONLY					2				2-P5 2	25.00	R7-1L (ANY TIME)	12"	18"	NO PARKING ANY TIME				1				MOUNT 1 WITH R7-5 (2-HOUR)	1.50
R3-8b-2	48"	30"	ONLY ONLY ONLY					1				2-P5 1	10.00	R7-1R (ANY TIME)	12"	18"	NO PARKING ANY TIME				1				1–P5 1	1.50
R3-8b-3	48"	30"	ONLY ONLY					2				2-P5 2	20.00	R7-1L (CORNER)	12"	18"	NO PARKING HERE TO CORNER				1				1-P5 1	1.50
R3-17	24"	18"	BIKE LANE					4				1-P5 4	12.00	R7-1R (CORNER)	12"	18"	NO PARKING HERE TO CORNER				3				MOUNT 1 WITH R7-8v MOUNT 2 WITH R7-5L (2-HOUR)	4.50
R3-17aP R3-17bP	24" 24"	8" 8"	AHEAD					2				MOUNT 2 WITH R3-17 MOUNT 2 WITH R3-17	2.67	R7-1 (THIS SIDE)	12"	18"	NO PARKING THIS SIDE				2				1–P5 2	3.00
R4-4	30"	36"	BEGIN RIGHT TURN LANE YIELD TO BIKES					2				1-P5 2	15.00	R7-4	12"	18"	NO STANDING ANY TIME				16				1-P5 16	24.00
R4-7	24"	30"	7					8				1-P5 7 MOUNT 1 WITH D3-1-1	40.00	R7-4L	12"	18"	NO STANDING ANY TIME				5				1-P5 3 MOUNT 2 WITH R7-5R (2-HOUR)	7.50
R5-1	30"	30"	DO NOT ENTER					18				1-P5 18	112.50	R7-4R	12"	18"	NO STANDING ANY TIME	•	•	•	7	V	•	V	1-P5 1 MOUNT 6 WITH R7-5L (2-HOUR)	10.50
R5-2	24"	24"		•		V	V	2	•	V	V	1-P5 2	8.00													
R5-11	24"	24"	NO ACCESS TO LAKE ST	3"D 3"D 3"D 3"D		2.5" 2" 2" 2" 2.5"		1	WHITE	BLACK	BLACK	MOUNT 1 ON SIGNAL POST	4.00													

FS&T DWG. NO. QA-013 DES JKM CHK WW

DR JKM CHK FAM
EST JKM CHK JMM

[Michal_J] - April 19, 2013 - 1:42pm - T:\QA-013 Mass Ave_Arlington\Drawings\QA-013_Traffic_Sign_Summary.dwg [SHEET 1 WARN-REG-ROUTE]

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.		81	177
	PROJECT FILE NO. 60	04687	

TRAFFIC SIGN SUMMARY
SHEET 2 OF 3

NOTES: 1. SUPER HIGH INTENSITY UNMETALIZED MICROPRISMATIC ELEMENT REFLECTIVE SHEETING M9.30.0 TYPE VII, VIII, IX, OR X SHALL BE USED FOR ALL SIGNS.

- 2. PBS PRINT BOTH SIDES
- 3 THE BACK OF ALL ONE SIDED SIGNS SHALL BE PAINTED

IDENTIFI-	SIZE (OF SIGN			TEX	T DIME	ENSIC)NS		NUMBER OF			CO	LOR			POST SIZE AND	AREA IN
CATION NUMBER	WIDTH	HEIGHT	TEXT		TTER GHT	VERTI SPAC		ARRO)W	SIGNS REQUIRED	BA0 GRO	CK- UND	LEG	END	BOR	ER	NUMBER REQUIRED	SQUARE FEET
R7-5 2-HOUR)	12"	18"	TWO HOUR PARKING		EE TCD	SEI MUT		SEE MUT(48		EE TCD		EE TCD	SE MUT		1–P5 48	252.00
R7-5L 2-HOUR)	12"	18"	TWO HOUR PARKING							10							1–P5 10	15.00
R7–5R 2–HOUR)	12"	18"	TWO HOUR PARKING							6							1–P5 6	9.00
R7-5 30-MIN)	12"	18"	30 MINUTE PARKING							1							1–P5 1	1.50
R7-5 (15-MIN)	12"	18"	15 MINUTE PARKING							1							1–P5 1	1.50
R7-5L (15-MIN)	12"	18"	15 MINUTE PARKING							1							MOUNT 1 WITH R7-5R (2-HOUR)	1.50
R7–6	12"	18"	NO PARKING LOADING ZONE	,	V	V		V		1	,	V	,		V		1–P5 1	1.50
R7–8v	12"	18"	HANDICAPPED PARKING THE SERVE	MAS	EE SDOT DS.	SEI MASS STD	DOT	SEE MASSI STDS	TOC	3	MAS:	EE SDOT DS.	MAS	EE SDOT DS.	SE MASS STD	DOT	1-P5 3	4.50
R7-8vL	12"	18"	HANDICAPPED PARKING							1							1-P5 1	1.50
R7–8vP	12"	6"	\$200 FINE	,	V	•		V		4	,	V	,	V	•		MOUNT 4 WITH R7-8v	2.00
R10-7a	24"	30"	DO NOT BLOCK DRIVEWAY	6'	"C "C "B	4.5 3.5 2.5 3.5	.") ."			1	WH	IITE	BL,	ACK	BLA	CK	1–P5 1	5.00
R10–11b	36"	36"	NO TURN ON RED		EE TCD	SEI MUT		SEE MUT(9	SI MU	EE TCD		EE TCD	SE MUT		MOUNT 7 ON MAST ARM MOUNT 2 ON SIGNAL POST	81.00
R10-22	18"	24"	TO REQUEST GREEN WAIT ON	MASS	EE SDOT DS.	SEI MASS STD	DOT	SEE MASSI STDS	TOC	15	MAS:	EE SDOT DS.	MAS	EE SDOT DS.	SE MASS STD	DOT	1-P5 11 MNT 3 ON SP MNT 1 ON MAST ARM POLE	45.00
R12-3 (5000)	24"	36"	NO TRUCKS OVER 5000 LBS EMPTY WT	SE MU	EE TCD	SEI MUT		SEE MUT(E CD	4	SI MU	EE TCD	SI MU	EE TCD	SE MUT	E CD	1-P5 2 MNT 1 W/ R6-2L MNT 1 ON SIGNAL POST	24.00

			LL ONE SIDED SIGNS SHAI DINSTALLATION.	L BE PAIN	ITED						SHEET 2 OF 3	
IDENTIFI—	SIZE C	F SIGN	TEVT	TEX	T DIMENSI	ONS	NUMBER OF		COLOR		POST SIZE AND	AREA IN
CATION NUMBER	WIDTH	HEIGHT	TEXT	LETTER HEIGHT	VERTICAL SPACING	ARROW	SIGNS REQUIRED	BACK- GROUND	LEGEND	BORDER	NUMBER REQUIRED	SQUARE FEET
W4-2R	36"	36"		SEE MUTCD	SEE MUTCD	SEE MUTCD	1	SEE MUTCD	SEE MUTCD	SEE MUTCD	1–P5 1	9.00
W11-2	36"	36"					14	YELLOW	BLACK	BLACK	1–P5 14	126.00
W14-1a (PBS)	36"	8"	DEAD END→				2	SEE MUTCD	SEE MUTCD	SEE MUTCD	MOUNT 1 WITH D3-1-32 MOUNT 1 WITH D3-1-34	4.00
W16-7PL	24"	12"					12	YELLOW	BLACK	BLACK	MOUNT 12 WITH W11-2	24.00
W16-9P	24"	12"	AHEAD	•	\	•	2	SEE MUTCD	SEE MUTCD	SEE MUTCD	MOUNT 2 WITH W11-2	4.00
M1-4 (3)	24"	24"	3	SEE MUTCD	SEE MUTCD	SEE MUTCD	4	SEE MUTCD	SEE MUTCD	SEE MUTCD	1–P5 4	16.00
M1-5 (2A)	24"	24"	2A	SEE MASSDOT STDS.	SEE MASSDOT STDS.	SEE MASSDOT STDS.	4	SEE MASSDOT STDS.	SEE MASSDOT STDS.	SEE MASSDOT STDS.	MOUNT 4 WITH M1-4 (3)	16.00
M3-1	24"	12"	NORTH	SEE MUTCD	SEE MUTCD	SEE MUTCD	2	SEE MUTCD	SEE MUTCD	SEE MUTCD	MOUNT 2 WITH M1-4 (3)	4.00
M3-2	24"	12"	EAST				2				MOUNT 2 WITH M1-4 (3)	4.00
M3-3	24"	12"	SOUTH				2				MOUNT 2 WITH M1-4 (3)	4.00
M3-4	24"	12"	WEST	•	•	•	2	•	•	*	MOUNT 2 WITH M1-4 (3)	4.00

FS&T DWG. NO. QA-013

[Michal_J] - April 19, 2013 - 1:42pm - T:\QA-013 Mass Ave_Arlington\Drawings\QA-013_Traffic_Sign_Summary.dwg [SHEET 2 WARN-REG-ROUTE]

STATE FED. AID PROJ. NO. SHEET TOTAL NO. SHEETS 82 177 PROJECT FILE NO. 604687

TRAFFIC SIGN SUMMARY SHEET 3 OF 3

NOTES: 1. SUPER HIGH INTENSITY UNMETALIZED MICROPRISMATIC ELEMENT REFLECTIVE SHEETING M9.30.0 TYPE VII, VIII, IX, OR X SHALL BE USED FOR ALL SIGNS.

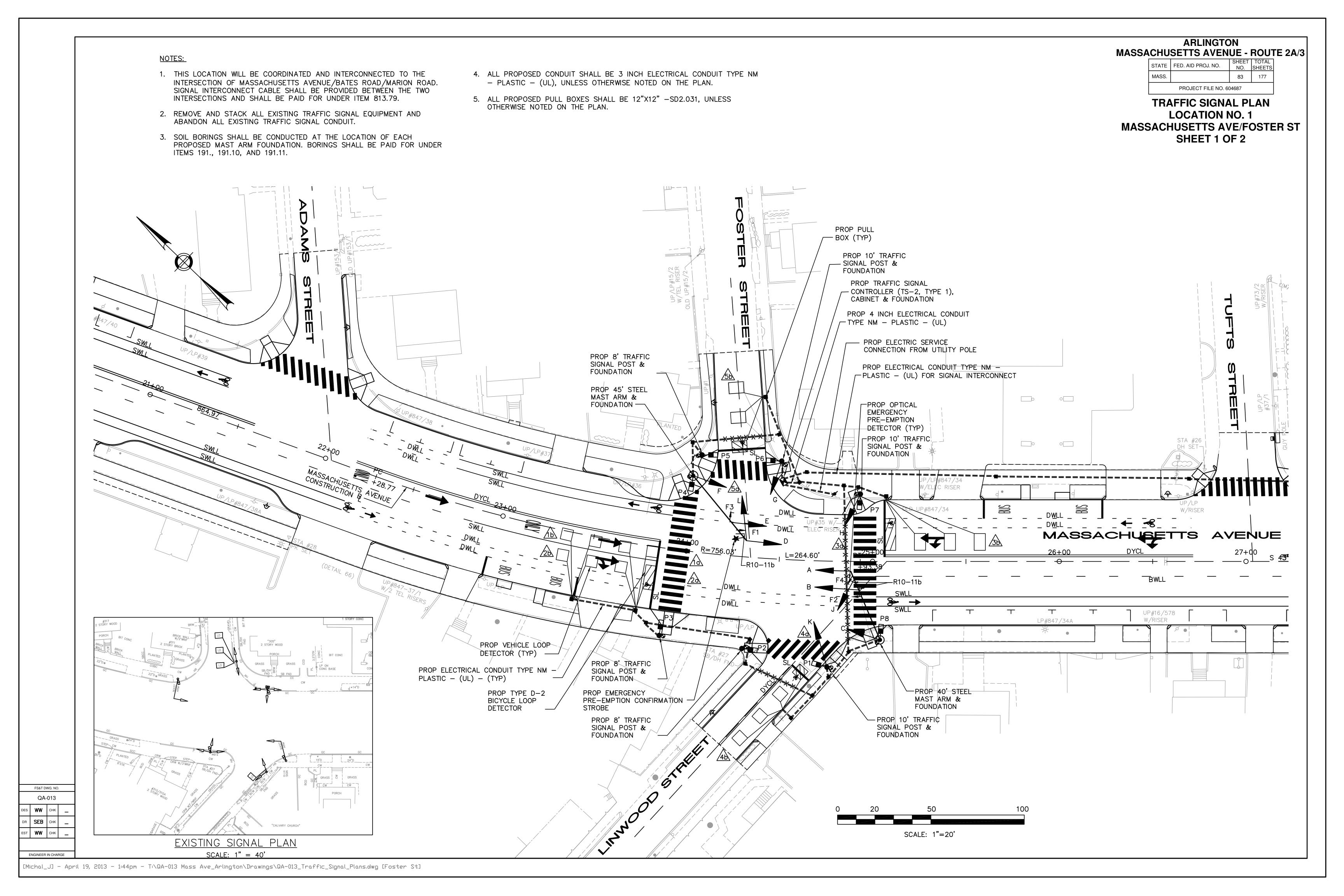
2. PBS - PRINT BOTH SIDES

IDENTIFI—	SIZE C	F SIGN	TEXT		TEX	T DIM	IENSI	DNS		NUMBER OF			COI	_OR		POST SIZE AND	AREA IN SQUARE
CATION NUMBER	WIDTH	HEIGHT		LET HEI	TER GHT	VERT SPA		ARR	OW	SIGNS REQUIRED	BAC GRO	CK- UND	LEG	END	BORDER	NUMBER REQUIRED	FEET
D3-1-1 (PBS)	51"	12"	Mass Ave	6D	4D	SEE H\ SIG	11.7	TOV SEAL	VN , 6"	12	GRE	EEN	WH	ITE	WHITE	1-P5 6 MOUNT 6 ON MAST ARM POLE	51.00
D3-1-2 (PBS)	45"	12"	Pond Ln							1						1-P5 1	3.75
D3-1-3 (PBS)	54"	12"	Palmer St							1						MOUNT 1 WITH D3-1-1	4.50
D3-1-4 (PBS)	57"	12"	Wyman Ter							2						1-P5 2	9.50
D3-1-5 (PBS)	54"	12"	Wyman St							1						MOUNT 1 WITH R6-2L	4.50
D3-1-6 (PBS)	45"	12"	Allen St							1						MOUNT 1 WITH R5-1	3.75
D3-1-7 (PBS)	54"	12"	Adams St							1						MOUNT 1 WITH R6-2L	4.50
D3-1-8 (PBS)	51"	12"	Foster St							1						MOUNT 1 WITH D3-1-1	4.25
D3-1-9 (PBS)	57 "	12"	Linwood St							1						1-P5 1	4.75
D3-1-10 (PBS)	45"	12"	Tufts St							1						MOUNT 1 WITH R6-2L	3.75
D3-1-11 (PBS)	51"	12"	Marion Rd							1						MOUNT 1 WITH R10-22	4.25
D3-1-12 (PBS)	48"	12"	Bates Rd							1						MOUNT 1 WITH R5-2	4.00
D3-1-13 (PBS)	60"	12"	Elmhurst Rd							1						1-P5 1	5.00
D3-1-14 (PBS)	51"	12"	Harlow St							1						MOUNT 1 WITH R6-2L	4.25
D3-1-15 (PBS)	54"	12"	Everett St							1						MOUNT 1 WITH R5-1	4.50
D3-1-16 (PBS)	48"	12"	Orvis Rd							1						MOUNT 1 WITH D3-1-1	4.00
D3-1-17 (PBS)	54"	12"	Grafton St							1						MOUNT 1 WITH D3-1-1	4.50
D3-1-18 (PBS)	51"	12"	Oxford St							1						MOUNT 1 WITH R5-1	4.25
D3-1-19 (PBS)	51"	12"	Winter St							1						MOUNT 1 ON MAST ARM POLE	4.25
03-1-20 (PBS)	45"	12"	Lake St		<u> </u>	,	•		<u> </u>	1		 		1	V	MOUNT 1 W/R12-3 (5000)	3.75

IDENTIFI—	SIZE C	F SIGN	TEVT		TEX	T DIM	IENSI	ONS		NUMBER OF		COLOR		POST SIZE AND	AREA IN
CATION NUMBER	WIDTH	HEIGHT	TEXT	LET HEI	TER GHT		TCAL CING	ARR	OW	SIGNS REQUIRED	BACK- GROUN	LEGEND	BORDER	NUMBER REQUIRED	SQUARE FEET
D3-1-21 (PBS)	60"	12"	Chandler St	6D	4D	SEE H\	STD. WY SNS	TO\ SEAL	WN	1	GREEN	WHITE	WHITE	MOUNT 1 WITH R5-1	5.00
D3-1-22 (PBS)	60"	12"	Cleveland St							1				MOUNT 1 WITH R5-1	5.00
D3-1-23 (PBS)	57"	12"	Egerton Rd							1				MOUNT 1 WITH R6-2L	4.75
D3-1-24 (PBS)	60"	12"	Marathon St							1				MOUNT 1 WITH R6-2L	5.00
D3-1-25 (PBS)	54"	12"	Melrose St							1				MOUNT 1 WITH R5-1	4.50
D3-1-26 (PBS)	66"	12"	Trowbridge St							1				1–P5 1	5.50
D3-1-27 (PBS)	48"	12"	Milton St							1				MOUNT 1 WITH R6-2L	4.00
D3-1-28 (PBS)	57"	12"	Windsor St							1				1–P5 1	4.75
D3-1-29 (PBS)	54 "	12"	Varnum St							1				1–P5 1	4.50
D3-1-30 (PBS)	57"	12"	Amsden St							1				1–P5 1	4.75
D3-1-31 (PBS)	57"	12"	Magnolia St							1				MOUNT 1 WITH R6-2L	4.75
D3-1-32 (PBS)	42"	12"	Lee Ter							1				1–P5 1	3.50
D3-1-33 (PBS)	63"	12"	Thorndike St							1				MOUNT 1 WITH R5-1	5.25
D3-1-34 (PBS)	42"	12"	Teel St							1				1–P5 1	3.50
D3-1-35 (PBS)	60"	12"	Fairmont St							1				MOUNT 1 WITH D3-1-1	5.00
D3-1-36 (PBS)	66"	12"	Henderson St							1				MOUNT 1 WITH D3-1-1	5.50
D3-1-37 (PBS)	63"	12"	Lafayette St							1				1-P5 1	5.25
D3-1-38 (PBS)	57"	12"	Sunapee Rd							1				1–P5 1	4.75
D3-1-39 (PBS)	63"	12"	Boulevard Rd							1				1–P5 1	5.25
D3-1-P	36"	12"	PRIVATE WAY	,	•	,	•			2	V	•	V	MNT 1 W/D3-1-32 MNT 1 W/D3-1-38	6.00

FS&T DWG. NO. QA-013

[Michal_J] - April 19, 2013 - 1:42pm - T:\QA-013 Mass Ave_Arlington\Drawings\QA-013_Traffic_Sign_Summary.dwg [SHEET 3 STREET NAME]



SEQUENCE AND TIMING FOR FULLY-ACTUATED TRAFFIC SIGNAL CONTROL **EMERGENCY PRE-EMPTION** NOT USED USED USED USED ***** ø7 DIR | HOUSING øЗ ø4 ø6 STREET RRRR RRR Ĝ | Y | R Ĝ | Y | R $R \mid R \mid R$ RIRIRIRIR MASS AVE $R \mid R \mid R$ $R \mid R \mid R$ G | Y | R R R G | Y MASS AVE EB B,C $R \mid R$ G | Y | R $R \mid R \mid R$ $R \mid R \mid R$ WB D MASS AVE Ĝ Y R $R \mid R \mid R$ $R \mid R \mid R$ R | R | R | R | R | R | R | R WB | E,F MASS AVE $R \mid R \mid R$ $R \mid R \mid R$ G Y R R | R | R $R \mid R \mid$ | R | R | R | G | Y | R LINWOOD ST NB | G,H,J $R \mid R \mid R$ $R \mid R \mid R$ $R \mid R \mid R$ G | Y | R | R | R | R | (R) | $R \mid R \mid R$ $R \mid R \mid R$ SB | K,L FOSTER ST DW DW DW DW DW DW DW DW DW | P1-P8 PEDESTRIAN MINIMUM GREEN | EXTENSION INTERVAL 72 72 11 11 MAXIMUM I (COORDINATED) MAXIMUM II (FREE) 4 | 3 4 | 3 4 3 4 | 3 4 | 3 4 | 3 4 | 3 | 4 | 3 CLEARANCE INTERVAL "WALK" INTERVAL 13 | 3 PED CLEARANCE INTERVAL DETECTOR MEMORY NON-LOCK NON-LOCK NON-LOCK NON-LOCK LOCK(PED) RECALL SWITCH SOFT OFF SOFT OFF OFF

ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3

STATE FED. AID PROJ. NO. SHEET NO. SHEETS

MASS. 84 177

PROJECT FILE NO. 604687

TRAFFIC SIGNAL PLAN
LOCATION NO. 1
MASSACHUSETTS AVE/FOSTER ST
SHEET 2 OF 2

TECHNICAL NOTES

CYCLE

NO. LENGTH

FS&T DWG. NO.

QA-013

ENGINEER IN CHARGI

120

80

PROGRAM/COORDINATION

OFFSET

% / SEC

91 / 109

93 / 74

- 1. ANY PHASE NOT CALLED WILL BE SKIPPED. SIGNAL INDICATION WILL NOT CHANGE IF THE ASSIGNED RIGHT OF WAY DOES NOT CHANGE DURING THE NEXT PHASE CALLED.
- 2. THE RIGHT-OF-WAY MAY BE ASSIGNED TO ANY PHASE OR ANY COMBINATION OF NON-CONFLICTING PHASES. IF CALLS EXIST ON ALL PHASES, THE RIGHT-OF-WAY SHALL BE ASSIGNED IN ACCORDANCE WITH THE PREFERENTIAL PHASING SEQUENCE.

69 | 4 | 3

32 | 4 | 3

- 3. OFFSET REFERENCED TO THE BEGINNING OF GREEN, PHASES 2 & 6
- 4. Ø2 + Ø6 DETECTION "CALL NON-ACTUATED" DURING COORDINATION
- 5. FLASHING OPERATION PER M.U.T.C.D. SECTION 4D.12
- 6. PLAN FORCE OFF/FLOATING FORCE SHALL BE IN EFFECT DURING COORDINATION.
- 7. CYCLE 1 = 6 AM 10 AM M-F CYCLE 2 = 3 PM - 7 PM M-F FREE OPERATION = ALL OTHER TIMES

EMERGENCY VEHICLE PRE-EMPTION PHASING AND PRIORITY NOTES:

69 | 4 | 3

32 | 4 | 3

11 4 3

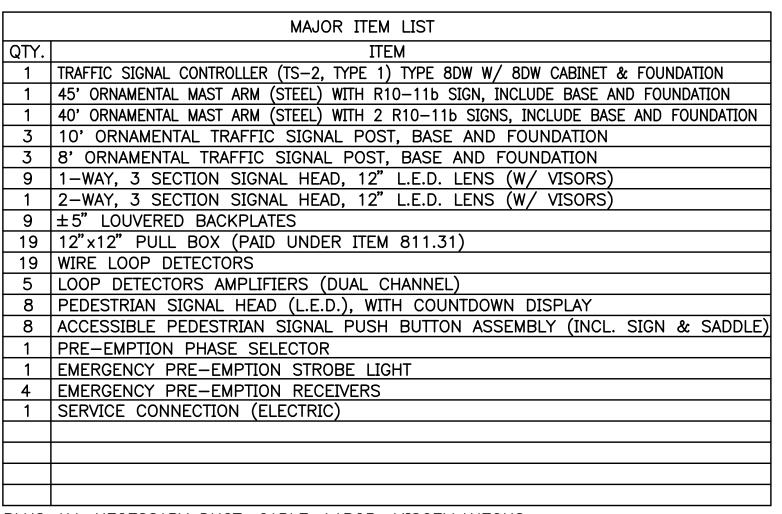
8 4 3

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE OPTICALLY TRANSMITTED BY OPTICAL EMITTERS MOUNTED IN EMERGENCY VEHICLES AND RECEIVED BY OPTICAL DETECTORS LOCATED AT EACH INTERSECTION.

11 | 4 | 3 | 7 | 16 | 3

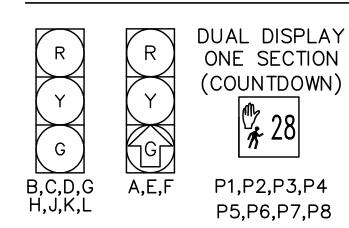
8 | 4 | 3 | 7 | 16 | 3

- 2. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY OPTICAL DETECTOR F1 (OR F2, F3, F4) THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY VEHICLE PRE-EMPTION PHASE F1 (OR F2, F3, F4) GREEN UNTIL PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN SERVICE EMERGENCY VEHICLE PRE-EMPTION PHASE F2 (OR F1) IF NECESSARY, THEN TIME PHASE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION. EMERGENCY VEHICLE PRE-EMPTION PHASE F3 AND F4 SHALL BE SIMILARLY SERVED.
- 3. MINIMUM GREEN (6 SECONDS), NORMAL VEHICLE CLEARANCE, SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
- 4. PRE-EMPTION STROBE SHALL BE ILLUMINATED WHENEVER ANY EMERGENCY VEHICLE PRE-EMPTION GREEN IS ON.
- 5. PRE-EMPTION SHALL BE ON A FIRST DETECTED, FIRST-SERVED BASIS



PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIALS AND EQUIPMENT TO COMPLETE THE INSTALLATION.

SIGNAL IDENTIFICATION



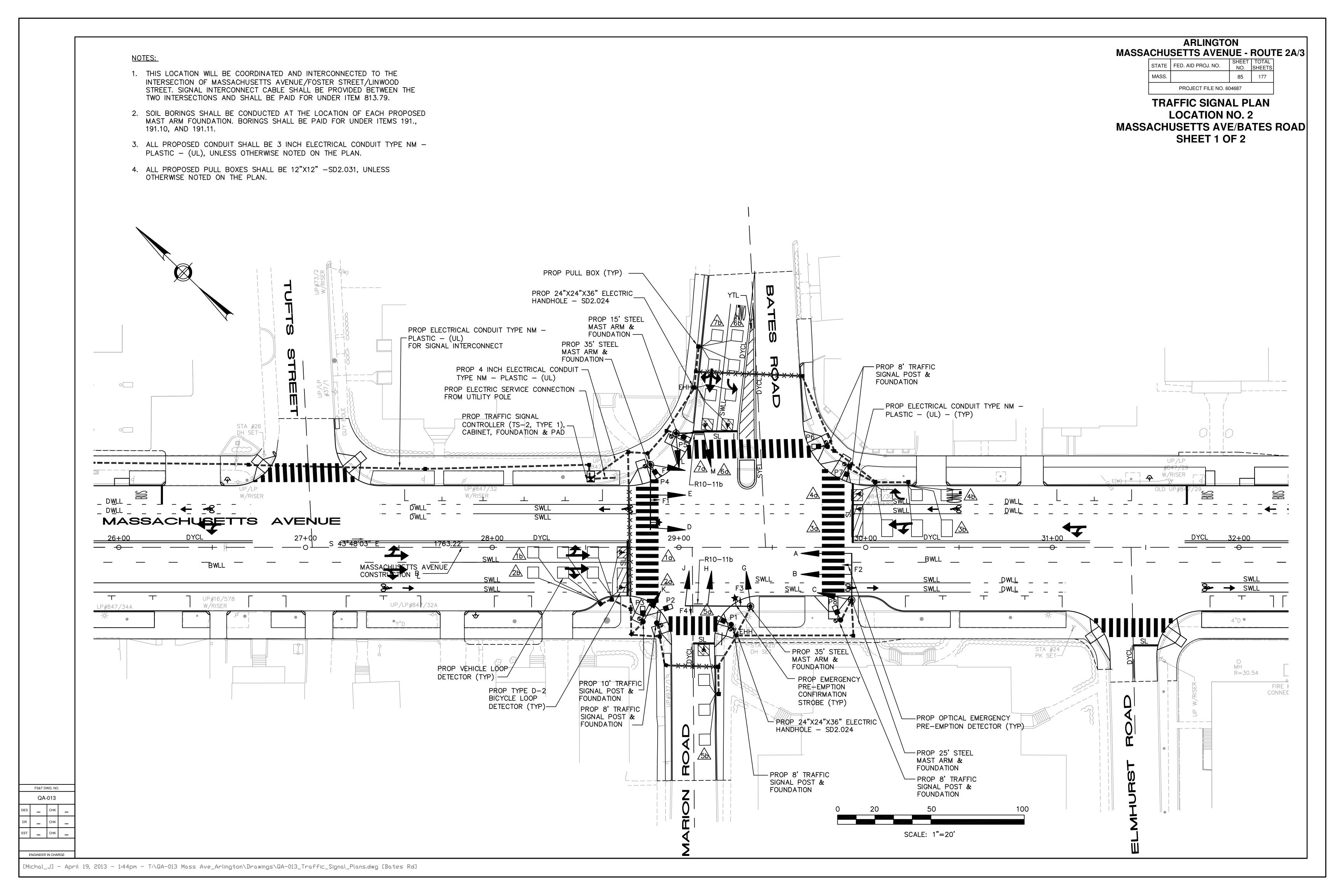
- 1. ALL TRAFFIC SIGNAL HEADS SHALL BE EQUIPPED WITH ±5" LOUVERED BACKPLATES.
- 2. ALL SIGNAL HEADS SHALL BE EQUIPPED WITH L.E.D. MODULES WITH 12" LENSES.
- 3. ALL PEDESTRIAN INDICATIONS SHALL BE 16" COUNTDOWN L.E.D.

			LOOP	DETECTOR O	PERATION						
DETECTOR NO.	NO. OF SEGMENTS	LOOP SIZE (FT)	AMPLIFIER NO.	CHANNEL NO.	SPLICE PATTERN*	NO. OF TURNS	ø CALLED	ø EXTENSION	MODE: A=PULSE B=PRES. C=CALLING	DELAY (SECONDS)	EXTENSION (SECONDS)
10	1	6' x 6'	1	1	S	3	6	_	С	0	0
<u>/b</u>	3	6' x 6'	1	2	S	3	6	6	В	0	0
20	1	13' x 6'	2	1	BL	4	6	_	С	0	0
<u>2b</u>	3	6' x 6'	2	2	S	3	6	6	В	0	0
30	1	17' x 6'	3	1	BL	4	2	_	С	0	0
<u>3b</u>	3	9' x 6'	3	2	S	3	2	2	В	0	0
40	1	6' x 6'	4	1	BL	4	4	_	С	0	0
<u>4b</u>	3	6' x 6'	4	2	S	3	4	4	В	0	0
50	1	8' x 6'	5	1	BL	4	8	_	С	0	0
<u></u> 5b	2	8' x 6'	5	2	S	3	8	8	В	0	0

* S=SERIES, P=SERIES/PARALLEL, BL=BICYCLE LOOPS

LOOP DETECTOR NOTES:

1. SEE LOOP DETECTOR DETAIL SHEETS FOR SPLICE PATTERN AND OTHER INFORMATION.



							SEQU	JENCE	AND TIMIN	NG FO	R FUL	LY—AC	CTUAT	ED TRAFFI	C SIGN	AL C	ONTRO	L										EN	MERGE	NCY	PRE-E	MPTIC	N			
	T Ø			NOT USEI			**	1/	NOT USED	ı		*	*	NO ¹ USE			X		NOT USED		OL			FLASHING OPERATION		X 4 X					A				*	I
STI	REET	DIR	HOUSING	ø1			ø2		ø3			ø4		ø5			ø6		ø7	ø8		φg)			øF1			øF2			øF3		Ø	øF4	
MASS A	/E	EB	A,B,C			R	R	R			R	R	R			G	Y	R		R R	R	R R	R	(Y)	R	R	R	G	Υ	R	R	R	R	R	R	R
MASS A	/E	WB	D			G	Υ	R			R	R	R			R	R	R		R R	R	R R	R	<u>(Y)</u>	G	Y	R	R	R	R	R	R	R	R	R	R
MASS A	/E	WB	E,F			G	Υ	R			R	R	R			R	R	R		R/G>R/Y>	R	R R	R	(Y)	G	Y	R	R	R	R	R	R	R	R	R	R
BATES F	RD	SB	G,H			<r< td=""><td><r< td=""><td><r< td=""><td></td><td></td><td><r< td=""><td><r< td=""><td><r< td=""><td></td><td></td><td><r< td=""><td><r< td=""><td><r< td=""><td></td><td><g <y<="" td=""><td><r< td=""><td><r <f<="" td=""><td>? <r< td=""><td><u>⟨₿</u></td><td><r< td=""><td><r< td=""><td><r< td=""><td><r< td=""><td><r< td=""><td><r< td=""><td><g< td=""><td><y< td=""><td><r< td=""><td><r <<="" td=""><td><r< td=""><td><r< td=""></r<></td></r<></td></r></td></r<></td></y<></td></g<></td></r<></td></r<></td></r<></td></r<></td></r<></td></r<></td></r<></td></r></td></r<></td></g></td></r<></td></r<></td></r<></td></r<></td></r<></td></r<></td></r<></td></r<></td></r<>	<r< td=""><td><r< td=""><td></td><td></td><td><r< td=""><td><r< td=""><td><r< td=""><td></td><td></td><td><r< td=""><td><r< td=""><td><r< td=""><td></td><td><g <y<="" td=""><td><r< td=""><td><r <f<="" td=""><td>? <r< td=""><td><u>⟨₿</u></td><td><r< td=""><td><r< td=""><td><r< td=""><td><r< td=""><td><r< td=""><td><r< td=""><td><g< td=""><td><y< td=""><td><r< td=""><td><r <<="" td=""><td><r< td=""><td><r< td=""></r<></td></r<></td></r></td></r<></td></y<></td></g<></td></r<></td></r<></td></r<></td></r<></td></r<></td></r<></td></r<></td></r></td></r<></td></g></td></r<></td></r<></td></r<></td></r<></td></r<></td></r<></td></r<></td></r<>	<r< td=""><td></td><td></td><td><r< td=""><td><r< td=""><td><r< td=""><td></td><td></td><td><r< td=""><td><r< td=""><td><r< td=""><td></td><td><g <y<="" td=""><td><r< td=""><td><r <f<="" td=""><td>? 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	MINIMUM (GREEN				10					4					10				6					6			6			6			6		
	EXTENSION	INTER	RVAL			3					3					3				3												İ				
ALS	MAXIMUM :	I (COO	RDINATED)			57					4					57				14																
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	MAXIMUM MAXIMUM CLEARANCE "WALK" IN	E INTER	RVAL				4	3				4	4				4	3		4	3			ONLY		4	3		4	3		3.5	3.5		4	3
	"WALK" IN	TERVAL																				7		_												
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	CLE ENGTH	OF	FSET																					\dashv												
NO. L	ENGTH	<u> </u>	/ SEC		1																															

TECHNICAL NOTES

120

80

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0 / 0

0 / 0

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54 4 3

20 | 4 |

PREFERENTIAL PHASING SEQUENCE

→ PEDESTRIAN MOVEMENT

PROT POL

4 | 4 |

4 | 4

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- 4. Ø2 + Ø6 DETECTION "CALL NON-ACTUATED" DURING COORDINATION
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ø2 & ø6

EMERGENCY VEHICLE PRE-EMPTION PHASING AND PRIORITY NOTES:

54 4 3

20 4

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- 2. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY OPTICAL DETECTOR F1 (OR F2, F3, F4) THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY VEHICLE PRE-EMPTION PHASE F1 (OR F2, F3, F4) GREEN UNTIL PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN SERVICE EMERGENCY VEHICLE PRE-EMPTION PHASE F2 (OR F1) IF NECESSARY, THEN TIME PHASE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION. EMERGENCY VEHICLE PRE-EMPTION PHASE F3 AND F4 SHALL BE SIMILARLY SERVED.
- 3. MINIMUM GREEN (6 SECONDS), NORMAL VEHICLE CLEARANCE, SHALL BE PROVIDED ON PHÀSES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
- 4. PRE-EMPTION STROBE SHALL BE ILLUMINATED WHENEVER ANY EMERGENCY VEHICLE PRE-EMPTION GREEN IS ON.
- 5. PRE-EMPTION SHALL BE ON A FIRST DETECTED, FIRST-SERVED BASIS

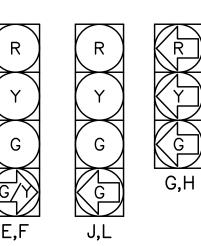
SIGNAL IDENTIFICATION

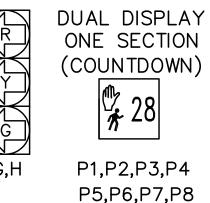
14 4 3 7 16 3

8 | 4 | 3 | 7 | 16 |



A,B,C, D,K,M





- 1. ALL TRAFFIC SIGNAL HEADS SHALL BE EQUIPPED WITH ±5" LOUVERED BACKPLATES.
- 2. ALL SIGNAL HEADS SHALL BE EQUIPPED WITH L.E.D. MODULES WITH 12" LENSES.
- 3. ALL PEDESTRIAN INDICATIONS SHALL BE 16" COUNTDOWN L.E.D.

ARLINGTON **MASSACHUSETTS AVENUE - ROUTE 2A/3**

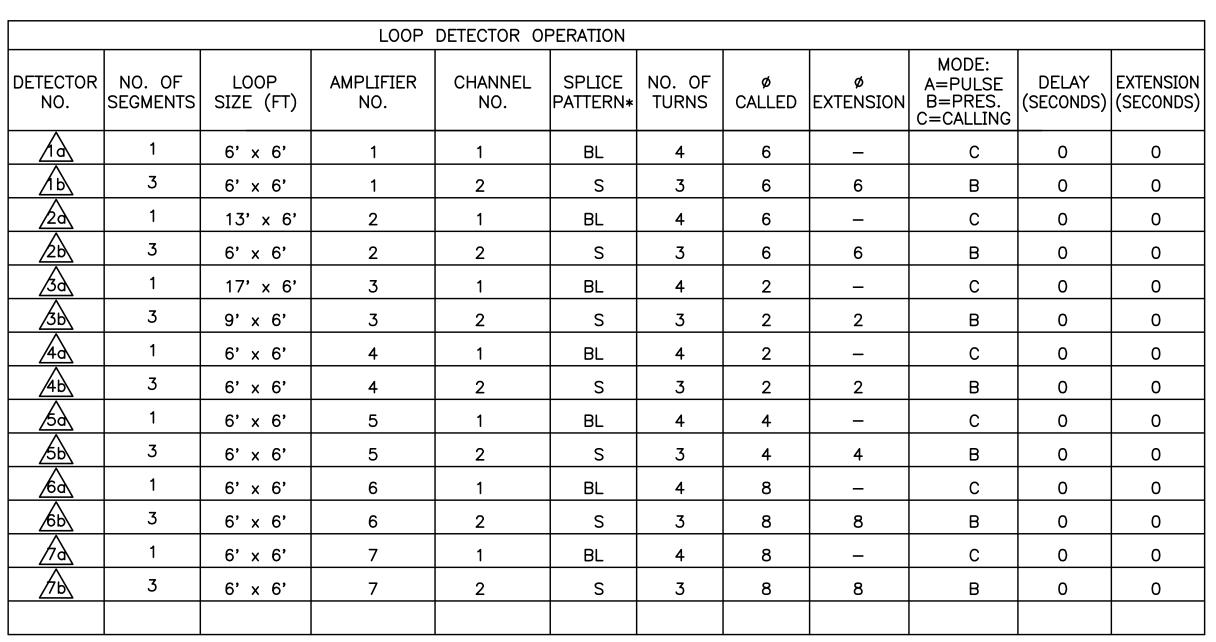
SHEET TOTAL NO. SHEETS STATE FED. AID PROJ. NO. PROJECT FILE NO. 604687

TRAFFIC SIGNAL PLAN LOCATION NO. 2 MASSACHUSETTS AVE/BATES ROAD SHEET 2 OF 2

	MAJOR ITEM LIST
QTY.	ITEM
1	TRAFFIC SIGNAL CONTROLLER (TS-2, TYPE 1) TYPE 8DW W/ 8DW CABINET, FOUNDATION & PAD
1	TRAFFIC SIGNAL MASTER CONTROLLER
1	15' ORNAMENTAL MAST ARM (STEEL) WITH R10-11b SIGN, INCLUDE BASE AND FOUNDATION
1	25' ORNAMENTAL MAST ARM (STEEL), INCLUDE BASE AND FOUNDATION
2	35' ORNAMENTAL MAST ARM (STEEL) WITH R10-11b SIGN, INCLUDE BASE AND FOUNDATION
5	8' ORNAMENTAL TRAFFIC SIGNAL POST, BASE AND FOUNDATION
1	10' ORNAMENTAL TRAFFIC SIGNAL POST, BASE AND FOUNDATION
9	1-WAY, 3 SECTION SIGNAL HEAD, 12" L.E.D. LENS (W/ VISORS)
1	1-WAY, 4 SECTION SIGNAL HEAD, 12" L.E.D. LENS (W/ VISORS)
2	1-WAY, 4 SECTION SIGNAL HEAD, 12" L.E.D. LENS (W/VISORS & BI-MODAL ARROW)
9	±5" LOUVERED BACKPLATES
20	12"x12" PULL BOX (PAID UNDER ITEM 811.31)
2	24"x24"x36" ELECTRIC HANDHOLE (PAID UNDER ITEM 811.24)
28	WIRE LOOP DETECTORS
7	LOOP DETECTORS AMPLIFIERS (DUAL CHANNEL)
8	PEDESTRIAN SIGNAL HEAD (L.E.D.), WITH COUNTDOWN DISPLAY
8	ACCESSIBLE PEDESTRIAN SIGNAL PUSH BUTTON ASSEMBLY (INCL. SIGN & SADDLE)
1	PRE-EMPTION PHASE SELECTOR
2	EMERGENCY PRE-EMPTION STROBE LIGHT
4	EMERGENCY PRE-EMPTION RECEIVERS
1	SERVICE CONNECTION (ELECTRIC)

PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS

MATERIALS AND EQUIPMENT TO COMPLETE THE INSTALLATION.

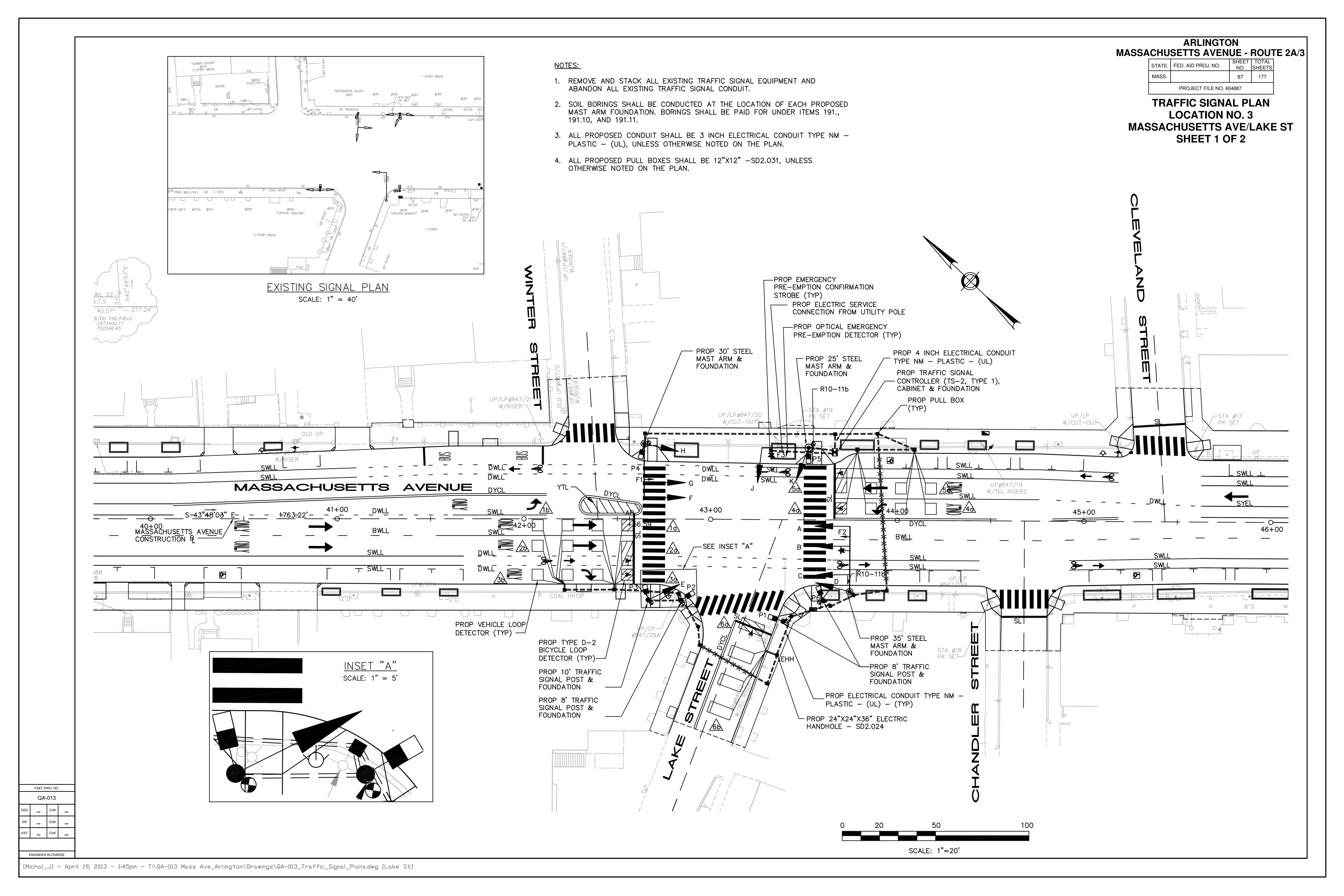


- * S=SERIES, P=SERIES/PARALLEL, BL=BICYCLE LOOPS
- **LOOP DETECTOR NOTES:**
- 1. SEE LOOP DETECTOR DETAIL SHEETS FOR SPLICE PATTERN AND OTHER INFORMATION.

FS&T DWG. NO. QA-013 ENGINEER IN CHARGE

[Michal_J] - April 19, 2013 - 3:35pm - T:\QA-013 Mass Ave_Arlington\Drawings\QA-013_Traffic Signal Timing.dwg [BATES MARION]

VEHICULAR MOVEMENT



STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
MASS.		88	177	
	PROJECT FILE NO. 60	04687		

TRAFFIC SIGNAL PLAN LOCATION NO. 3 MASSACHUSETTS AVE/LAKE ST SHEET 2 OF 2

						SEQ	UENCE	AND TIMING FC	R FUL	LY—A	CTUAT	ED TR	RAFFIC	SIGN	AL CO	NTROL										EME	RGENC	Y PRE	-EMP	TION		
				NOT USED				NOT USED			1		K			>		NOT USED		NOT JSED			FLASHING	OPERATION				>				ı
S	TREET	DIR	HOUSING	ø1		ø2		ø3		ø4			ø5			ø6		ø7		ø8	Q	ø 9			øF			øF2			øF3	
MASS	AVE	EB	A,B		R	R	R		R	R	R	R	R	R	Ĝ	Υ	R				R	R	R (F	R	R	Ĝ	Υ	R	R	R	R
MASS	AVE	EB	C,D		R	R	R		R	R	R	R	R	R	G	Υ	R				R	R	R (F	R	R	G	Υ	R	R	R	R
MASS	AVE	WB	E,F		G	Y	R		R	R	R	<g g<="" td=""><td><y g<="" td=""><td>G</td><td>R</td><td>R</td><td>R</td><td></td><td></td><td></td><td>R</td><td>R</td><td>R (</td><td><u>(</u>)</td><td>Y</td><td>R</td><td>R</td><td>R</td><td>R</td><td>R</td><td>R</td><td>R</td></y></td></g>	<y g<="" td=""><td>G</td><td>R</td><td>R</td><td>R</td><td></td><td></td><td></td><td>R</td><td>R</td><td>R (</td><td><u>(</u>)</td><td>Y</td><td>R</td><td>R</td><td>R</td><td>R</td><td>R</td><td>R</td><td>R</td></y>	G	R	R	R				R	R	R (<u>(</u>)	Y	R	R	R	R	R	R	R
MASS	AVE	WB	G,H		G	Υ	R		R	R	R	R	R	R	R	R	R				R	R	R (<u>(</u>)	Υ	R	R	R	R	R	R	R
LAKE S	ST	NB	J		R	R	R		<g g<="" td=""><td>Υ</td><td>R</td><td>R</td><td>R</td><td>R</td><td>R</td><td>R</td><td>R</td><td></td><td></td><td></td><td>R</td><td>R</td><td>R (</td><td><u>5</u>) F</td><td>R</td><td>R</td><td>R</td><td>R</td><td>R</td><td><g g<="" td=""><td>Υ</td><td>R</td></g></td></g>	Υ	R	R	R	R	R	R	R				R	R	R (<u>5</u>) F	R	R	R	R	R	<g g<="" td=""><td>Υ</td><td>R</td></g>	Υ	R
LAKE S	ST	NB	К		R	R	R		G	Υ	R	R	R	R	R	R	R				R	R	R (3) F	R	R	R	R	R	G	Υ	R
PEDES	TRIAN		P1-P6		DW	DW	DW		DW	DW	DW	DW	DW	DW	DW	DW	DW				W FI	DW C	DW O	UT D'	V DW	DW	DW	DW	DW	DW	DW	DW
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ECC	MAXIMUM I				42	1			21			15	1		20		Ī						;	_								
INTERVALS (IN SECONDS)	CLEARANCE		RVAL			4	3			4	3		4	3		4	3								4	3		4	3		4	3
E)	"WALK" INT																				7		_									1
	PED CLEAR	RANCE	INTERVAL																		1	16	3									
	DETECTOR	MEMO	RY		NC	N-LO	DCK		NO	V-LO	CK	NO	N-LOC	K	NO	N-LO	CK	•		•	LOCK	(PED)		EMERGENCI 		-	-					
	RECALL SW					SOFT			†	OFF			OFF			SOFT			1		OF			Σ								

TECHNICAL NOTES

- 1. ANY PHASE NOT CALLED WILL BE SKIPPED. SIGNAL INDICATION WILL NOT CHANGE IF THE ASSIGNED RIGHT OF WAY DOES NOT CHANGE DURING THE NEXT PHASE CALLED.
- 2. THE RIGHT-OF-WAY MAY BE ASSIGNED TO ANY PHASE OR ANY COMBINATION OF NON-CONFLICTING PHASES. IF CALLS EXIST ON ALL PHASES, THE RIGHT-OF-WAY SHALL BE ASSIGNED IN ACCORDANCE WITH THE PREFERENTIAL PHASING SEQUENCE.
- 3. FLASHING OPERATION PER M.U.T.C.D. SECTION 4D.12
- 4. MAX I = NORMAL OPERATIONMAX II = MON-FRI, 3PM - 7PM

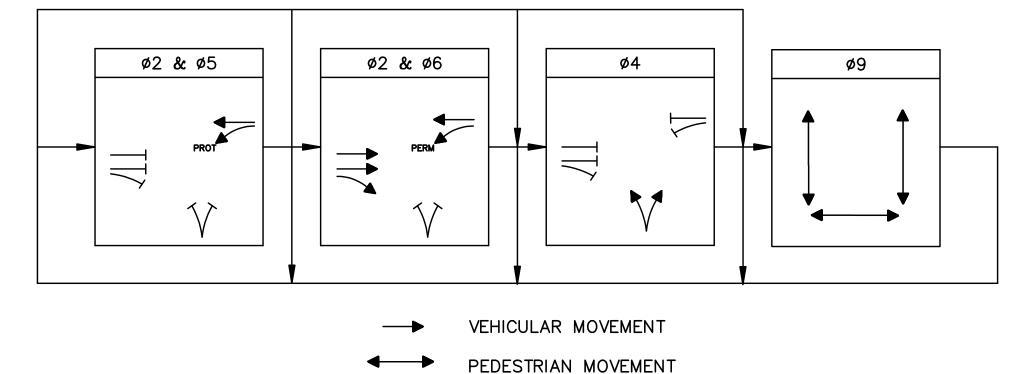
EMERGENCY VEHICLE PRE-EMPTION PHASING AND PRIORITY NOTES:

- 1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE OPTICALLY TRANSMITTED BY OPTICAL EMITTERS MOUNTED IN EMERGENCY VEHICLES AND RECEIVED BY OPTICAL DETECTORS LOCATED AT EACH INTERSECTION.
- 2. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY OPTICAL DETECTOR F1 (OR F2, F3) THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY VEHICLE PRE-EMPTION PHASE F1 (OR F2, F3) GREEN UNTIL PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN SERVICE EMERGENCY VEHICLE PRE-EMPTION PHASE F2 (OR F1) IF NECESSARY, THEN TIME PHASE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION. EMERGENCY VEHICLE PRE-EMPTION PHASE F3 SHALL BE SIMILARLY SERVED.
- 3. MINIMUM GREEN (6 SECONDS), NORMAL VEHICLE CLEARANCE, SHALL BE PROVIDED ON PHÀSES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
- 4. PRE-EMPTION STROBE SHALL BE ILLUMINATED WHENEVER ANY EMERGENCY VEHICLE PRE-EMPTION GREEN IS ON.
- 5. PRE-EMPTION SHALL BE ON A FIRST DETECTED, FIRST-SERVED BASIS

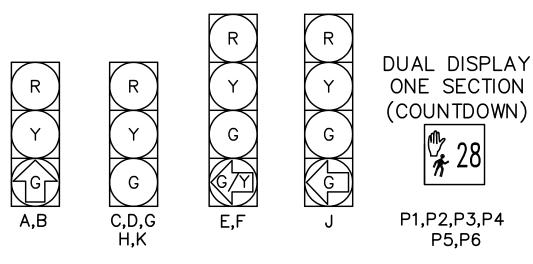
	MAJOR ITEM LIST
QTY.	ITEM
1	TRAFFIC SIGNAL CONTROLLER (TS-2, TYPE 1) TYPE 8DW W/ 8DW CABINET & FOUNDATION
1	25' ORNAMENTAL MAST ARM (STEEL), INCLUDE BASE AND FOUNDATION
1	30' ORNAMENTAL MAST ARM (STEEL) WITH R10-11b SIGN, INCLUDE BASE AND FOUNDATION
1	35' ORNAMENTAL MAST ARM (STEEL) WITH R10-11b SIGN, INCLUDE BASE AND FOUNDATION
1	10' ORNAMENTAL TRAFFIC SIGNAL POST, BASE AND FOUNDATION
3	8' ORNAMENTAL TRAFFIC SIGNAL POST, BASE AND FOUNDATION
7	1-WAY, 3 SECTION SIGNAL HEAD, 12" L.E.D. LENS (W/ VISORS)
1	1-WAY, 4 SECTION SIGNAL HEAD, 12" L.E.D. LENS (W/ VISORS)
2	1-WAY, 4 SECTION SIGNAL HEAD, 12" L.E.D. LENS (W/VISORS & BI-MODAL ARROW)
8	±5" LOUVERED BACKPLATES
15	12"x12" PULL BOX (PAID UNDER ITEM 811.31)
1	24"x24"x36" ELECTRIC HANDHOLE (PAID UNDER ITEM 811.24)
24	WIRE LOOP DETECTORS
6	LOOP DETECTORS AMPLIFIERS (DUAL CHANNEL)
6	PEDESTRIAN SIGNAL HEADS (L.E.D.), WITH COUNTDOWN DISPLAY
6	ACCESSIBLE PEDESTRIAN SIGNAL PUSH BUTTON ASSEMBLY (INCL. SIGN & SADDLE)
1	PRE-EMPTION PHASE SELECTOR
2	EMERGENCY PRE-EMPTION STROBE LIGHT
3	EMERGENCY PRE-EMPTION RECEIVERS
1	SERVICE CONNECTION (ELECTRIC)

PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIALS AND EQUIPMENT TO COMPLETE THE INSTALLATION.

PREFERENTIAL PHASING SEQUENCE



SIGNAL IDENTIFICATION



- 1. ALL TRAFFIC SIGNAL HEADS SHALL BE EQUIPPED WITH ±5" LOUVERED BACKPLATES.
- 2. ALL SIGNAL HEADS SHALL BE EQUIPPED WITH L.E.D. MODULES WITH 12" LENSES.
- 3. ALL PEDESTRIAN INDICATIONS SHALL BE 16" COUNTDOWN L.E.D.

			LOOP	DETECTOR O	PERATION		_				
DETECTOR NO.	NO. OF SEGMENTS	LOOP SIZE (FT)	AMPLIFIER NO.	CHANNEL NO.	SPLICE PATTERN*	NO. OF TURNS	ø CALLED	ø EXTENSION	MODE: A=PULSE B=PRES. C=CALLING		EXTENSION (SECONDS)
10	1	6' x 6'	1	1	BL	4	6	_	С	0	0
<u>√b</u>	3	6' x 6'	1	2	S	3	6	6	В	0	0
20	1	13' x 6'	2	1	BL	4	6	_	С	0	0
<u>2b</u>	3	6' x 6'	2	2	S	3	6	6	В	0	0
3	1	6' x 6'	3	1	BL	4	6	_	С	0	0
<u>3b</u>	3	6' x 6'	3	2	S	3	6	6	В	0	0
4	1	6' x 6'	4	1	BL	4	5	_	С	0	0
<u>4</u> b	3	6' x 6'	4	2	S	3	5	5	В	0	0
5	1	13' x 6'	5	1	BL	4	2	_	С	0	0
<u>∕5b</u>	3	6' x 6'	5	2	S	3	2	2	В	0	0
6	1	13' x 6'	6	1	BL	4	4	_	С	0	0
<u>6</u> b	3	13' x 6'	6	2	S	3	4	4	В	0	0

* S=SERIES, P=SERIES/PARALLEL, BL=BICYCLE LOOPS

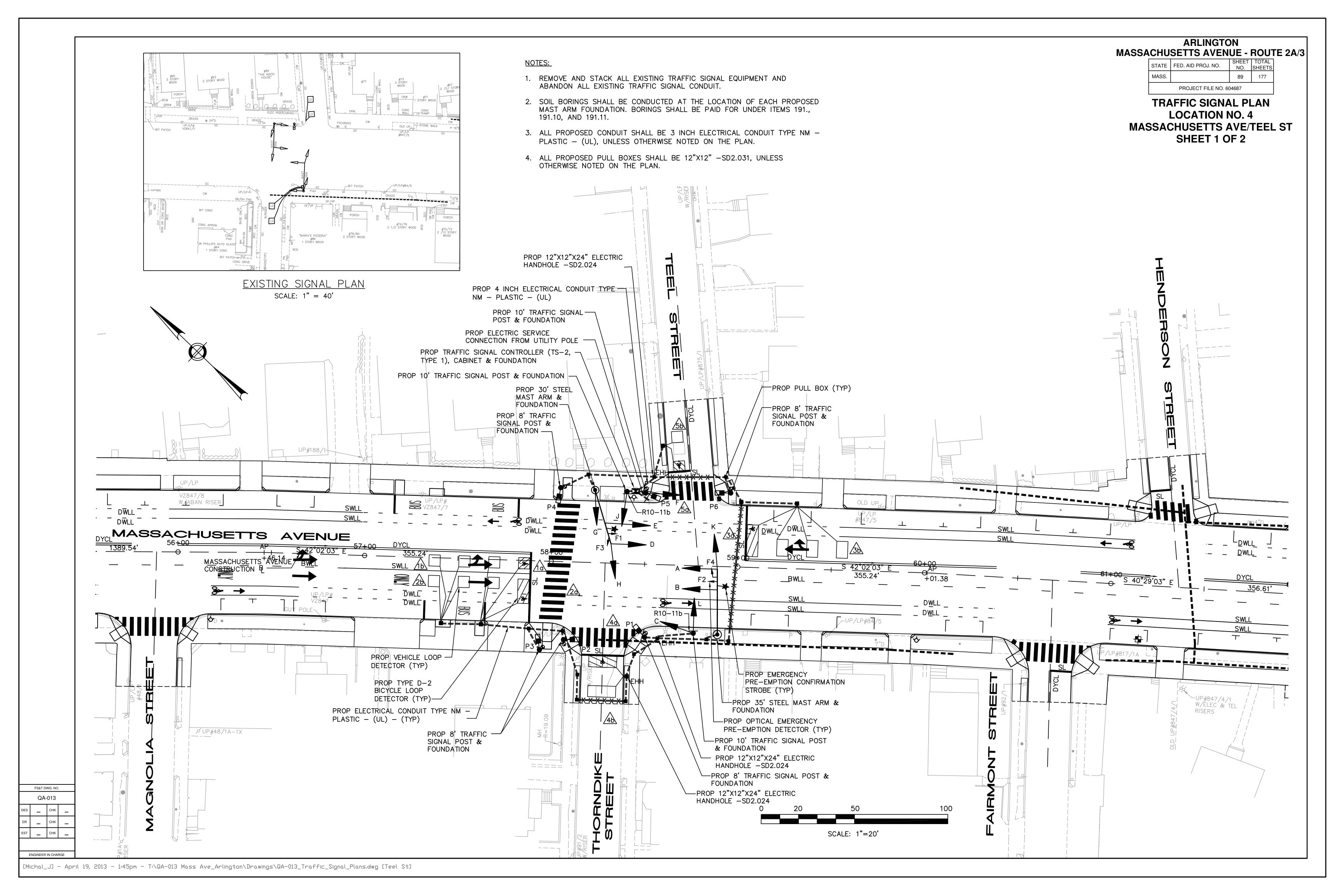
LOOP DETECTOR NOTES:

1. SEE LOOP DETECTOR DETAIL SHEETS FOR SPLICE PATTERN AND OTHER INFORMATION.

FS&T DWG. NO.

QA-013

ENGINEER IN CHARGE



STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
MASS.		90	177	
	PROJECT FILE NO. 60	04687		

TRAFFIC SIGNAL PLAN LOCATION NO. 4 MASSACHUSETTS AVE/TEEL ST SHEET 2 OF 2

						SEC	UENCE A	ND TIM	ING FO	OR FUL	LY—A	CTUAT	ED TR	RAFFIC SIG	SNAL CO	ONTRO	L											EMER	GENC	Y PR	RE-EM	IPTION	l			
	4	Ø		NOT USED		•		NO1 USE						NOT USED				NOT USED		*			+	FLASHING OPERATION		★		₫					*			
	STREET	DIR	HOUSING	ø1		ø2		ø3			ø4			ø5		ø6		ø7		ø8		ø9			Ø	F1		Ø	F2			øF3			øF4	
MASS	AVE	EB	A		R	R	R			R	R	R			G	Υ	R		R	R R	R	R	R	()	R	R	R	G	Υ	R	R	R	R	R	R	R
MASS	AVE	EB	В,С		R	R	R			R	R	R			Ĝ	Υ	R		R	R R	R	R	R	(\mathcal{E})	R	R	R	Ĝ	Υ	R	R	R	R	R	R	R
MASS	AVE	WB	D		Ĝ	Y	R			R	R	R			R	R	R		R	R R	R	R	R	()	Ĝ	Υ	R	R	R	R	R	R	R	R	R	R
MASS	AVE	WB	E,F		G	Y	R			R	R	R			R	R	R		R	R R	R	R	R	(E)	G	Υ	R	R	R	R	R	R	R	R	R	R
THORN	IDIKE ST	NB	G,H,J		R	R	R			G	Y	R			R	R	R		R	R R	R	R	R	\mathbb{R}	R	R	R	R	R	R	G	Υ	R	R	R	R
TEEL	ST	SB	K,L		R	R	R			R	R	R			R	R	R		G	Y R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R
PEDES	TRIAN		P1-P6		DW	DW	DW			DW	DW	DW			DW	DW	DW		DW	DW DW	W	FDW	DW	OUT [DW C	w	DW	DW [DW	DW	DW	DW	DW	DW	DW	DW
	MINIMUM	GREEN			10					6					10				6	•			•		6			6	•		6	•		6		
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ERV ECC	MAXIMUM	II			26					6					26				6					≻,											<u> </u>	
INTERV (IN SEC	CLEARANC	E INTE	RVAL			4	3				4	3				4	3			4 3				ONLY		4	3		4	3		4	3		4	3
	"WALK" IN	NTERVA	L																		7															
	PED CLEA	RANCE	INTERVAL																			16	3) EN												
	DETECTOR	MEMC	RY		N(ON-L	OCK			NO	N-LO	CK		-	NC	N-LC	CK		NON	-LOCK	L	CK(P	ED)	MERGENCY												

TECHNICAL NOTES

RECALL SWITCH

- 1. ANY PHASE NOT CALLED WILL BE SKIPPED. SIGNAL INDICATION WILL NOT CHANGE IF THE ASSIGNED RIGHT OF WAY DOES NOT CHANGE DURING THE NEXT PHASE CALLED.
- 2. THE RIGHT-OF-WAY MAY BE ASSIGNED TO ANY PHASE OR ANY COMBINATION OF NON-CONFLICTING PHASES. IF CALLS EXIST ON ALL PHASES, THE RIGHT-OF-WAY SHALL BE ASSIGNED IN ACCORDANCE WITH THE PREFERENTIAL PHASING SEQUENCE.

SOFT

- 3. FLASHING OPERATION PER M.U.T.C.D. SECTION 4D.12
- 4. MAX I = NORMAL OPERATIONMAX II = MON-FRI, 3 PM - 7 PM

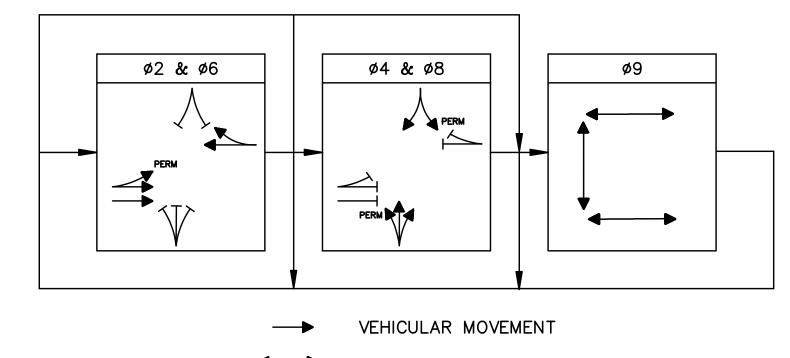
EMERGENCY VEHICLE PRE-EMPTION PHASING AND PRIORITY NOTES:

- 1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE OPTICALLY TRANSMITTED BY OPTICAL EMITTERS MOUNTED IN EMERGENCY VEHICLES AND RECEIVED BY OPTICAL DETECTORS LOCATED AT EACH INTERSECTION.
- 2. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY OPTICAL DETECTOR F1 (OR F2, F3, F4) THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY VEHICLE PRE-EMPTION PHASE F1 (OR F2, F3, F4) GREEN UNTIL PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN SERVICE EMERGENCY VEHICLE PRE-EMPTION PHASE F2 (OR F1) IF NECESSARY, THEN TIME PHASE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION. EMERGENCY VEHICLE PRE-EMPTION PHASE F3 AND F4 SHALL BE SIMILARLY SERVED.
- 3. MINIMUM GREEN (6 SECONDS), NORMAL VEHICLE CLEARANCE, SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
- 4. PRE-EMPTION STROBE SHALL BE ILLUMINATED WHENEVER ANY EMERGENCY VEHICLE PRE-EMPTION GREEN IS ON.
- 5. PRE-EMPTION SHALL BE ON A FIRST DETECTED, FIRST-SERVED BASIS

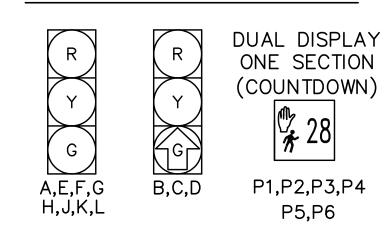
	MAJOR ITEM LIST
QTY.	ITEM
1	TRAFFIC SIGNAL CONTROLLER (TS-2, TYPE 1) TYPE 8DW W/ 8DW CABINET & FOUNDATION
1	30' ORNAMENTAL MAST ARM (STEEL), INCLUDE BASE AND FOUNDATION
1	35' ORNAMENTAL MAST ARM (STEEL), INCLUDE BASE AND FOUNDATION
2	10' ORNAMENTAL TRAFFIC SIGNAL POST, BASE AND FOUNDATION
6	8' ORNAMENTAL TRAFFIC SIGNAL POST, BASE AND FOUNDATION
7	1-WAY, 3 SECTION SIGNAL HEAD, 12" L.E.D. LENS (W/ VISORS)
2	2-WAY, 3 SECTION SIGNAL HEAD, 12" L.E.D. LENS (W/ VISORS)
9	±5" LOUVERED BACKPLATES
15	12"x12" PULL BOX (PAID UNDER ITEM 811.31)
3	24"x24"x36" ELECTRIC HANDHOLE (PAID UNDER ITEM 811.24)
16	WIRE LOOP DETECTORS
5	LOOP DETECTORS AMPLIFIERS (DUAL CHANNEL), INCLUDES 2 SPARE
6	PEDESTRIAN SIGNAL HEAD (L.E.D.), WITH COUNTDOWN DISPLAY
6	ACCESSIBLE PEDESTRIAN SIGNAL PUSH BUTTON ASSEMBLY (INCL. SIGN & SADDLE)
1	PRE-EMPTION PHASE SELECTOR
2	EMERGENCY PRE-EMPTION STROBE LIGHT
4	EMERGENCY PRE-EMPTION RECEIVERS
1	SERVICE CONNECTION (ELECTRIC)

PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIALS AND EQUIPMENT TO COMPLETE THE INSTALLATION.

PREFERENTIAL PHASING SEQUENCE



SIGNAL IDENTIFICATION

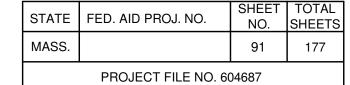


- 1. ALL TRAFFIC SIGNAL HEADS SHALL BE EQUIPPED WITH ±5" LOUVERED BACKPLATES.
- 2. ALL SIGNAL HEADS SHALL BE EQUIPPED WITH L.E.D. MODULES WITH 12" LENSES.
- 3. ALL PEDESTRIAN INDICATIONS SHALL BE 16" COUNTDOWN L.E.D.

			LOOP	DETECTOR OI	PERATION						
DETECTOR NO.	NO. OF SEGMENTS	LOOP SIZE (FT)	AMPLIFIER NO.	CHANNEL NO.	SPLICE PATTERN*	NO. OF TURNS	ø CALLED	ø EXTENSION	MODE: A=PULSE B=PRES. C=CALLING	DELAY (SECONDS)	EXTENSION (SECONDS)
1	1	6' x 6'	1	1	BL	4	6	_	С	0	0
<u>/b</u>	3	6' x 6'	1	2	S	3	6	6	В	0	0
20	1	13' x 6'	2	1	BL	4	6	_	С	0	0
<u>2</u> b	3	6' x 6'	2	2	S	3	6	6	В	0	0
3	1	17' x 6'	3	1	BL	4	2	_	С	0	0
3b	3	9' x 6'	3	2	S	3	2	2	В	0	0
40	1	15' x 6'	4	1	BL	4	4	_	С	0	0
<u>4b</u>	1	15' x 6'	4	2	S	3	4	4	В	0	0
50	1	6' x 6'	5	1	BL	4	8	_	С	0	0
₹b	1	6' x 6'	5	2	S	3	8	8	В	0	0

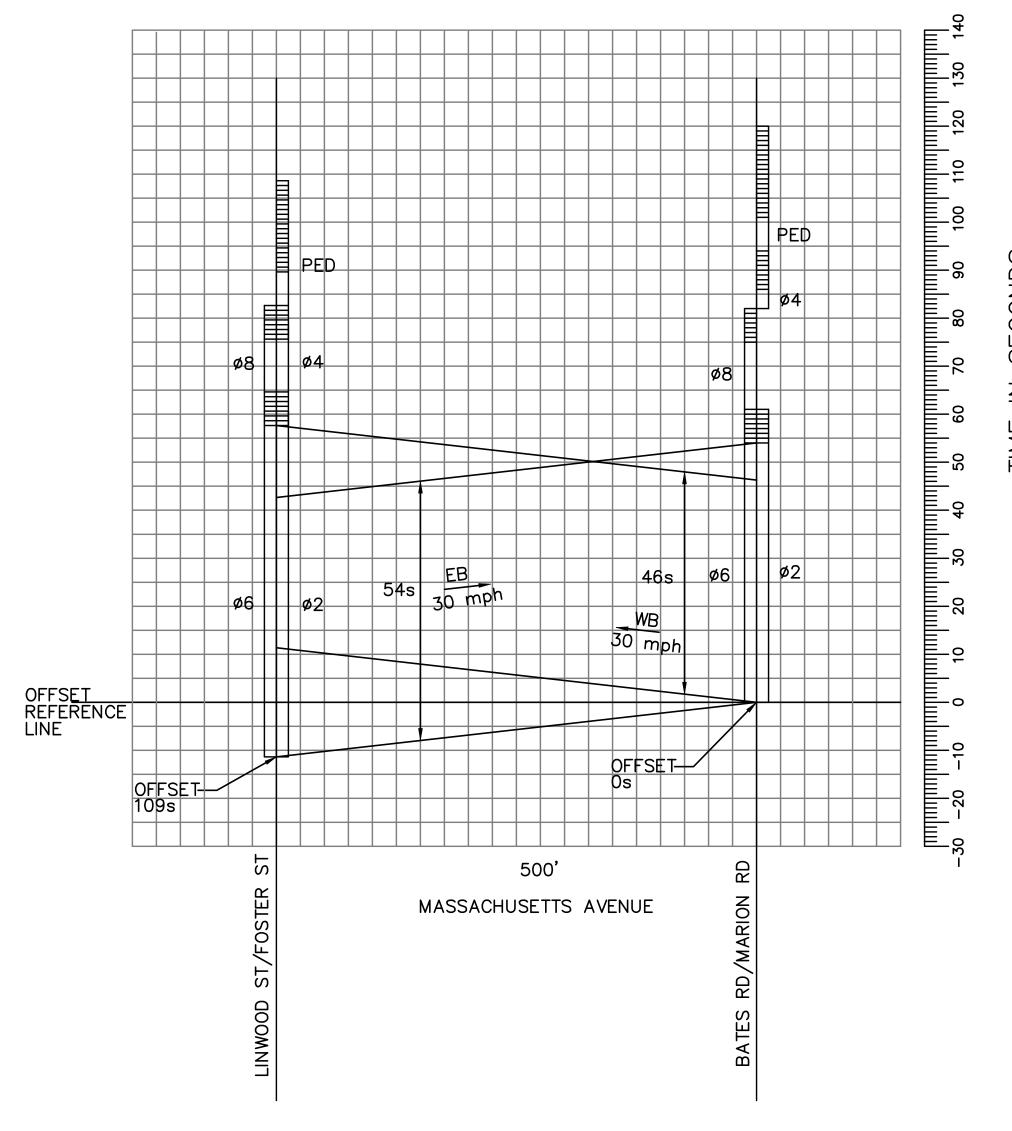
- * S=SERIES, P=SERIES/PARALLEL, BL=BICYCLE LOOPS
- LOOP DETECTOR NOTES:
- 1. SEE LOOP DETECTOR DETAIL SHEETS FOR SPLICE PATTERN AND OTHER INFORMATION.

	QA	-013		
DES	_	СНК	ı	*
DR EST	-	CHK	_	→ VEHICULAR MOVEMENT
E31	_	Onk	_	PEDESTRIAN MOVEMENT
E	NGINEER	R IN CHAF	RGE	

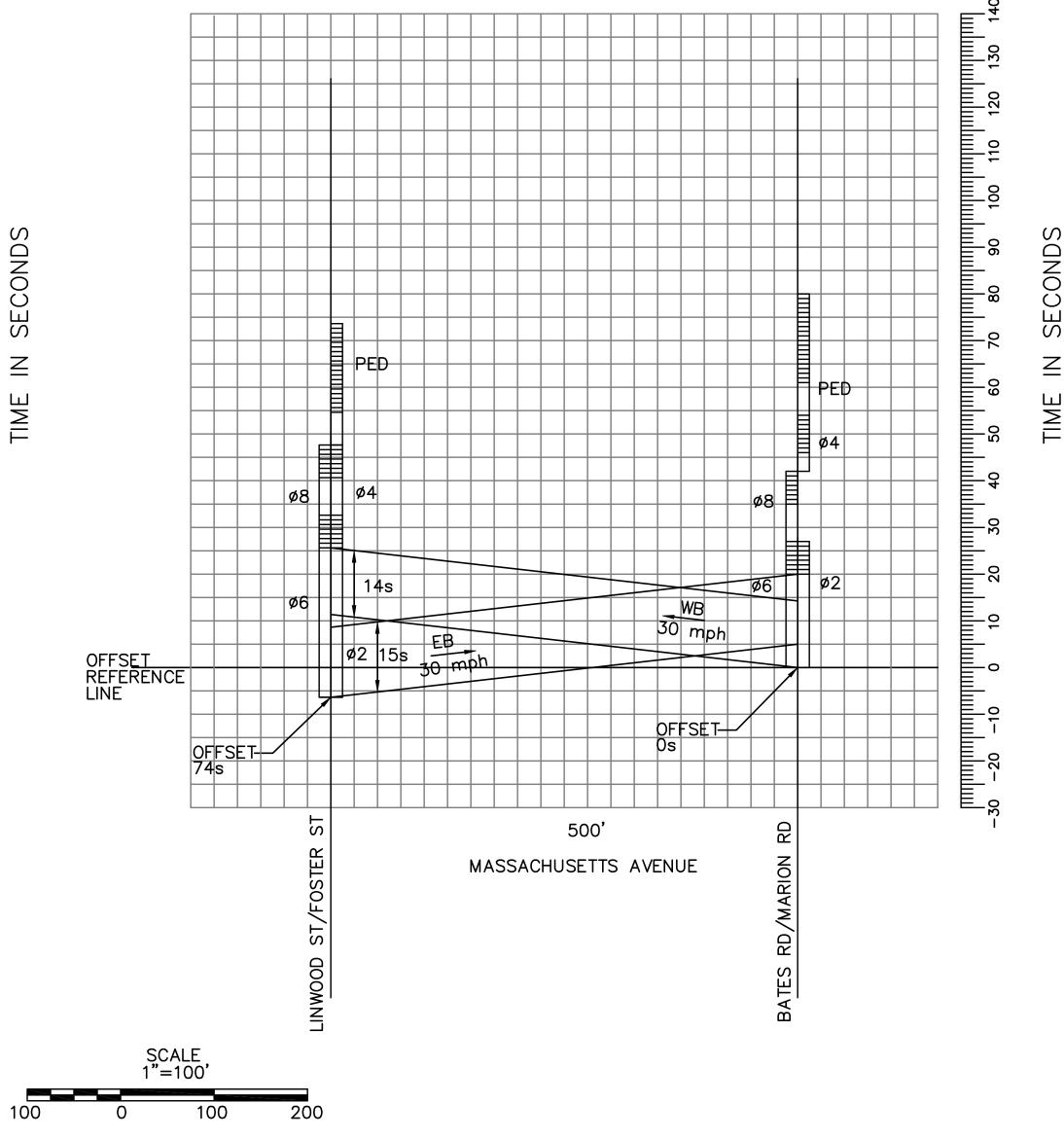


TRAFFIC SIGNAL PLAN SIGNAL COORDINATION

PLAN 1 WEEKDAY MORNING PEAK HOURS MASSACHUSETTS AVENUE 120 SECOND CYCLE



PLAN 2 WEEKDAY EVENING PEAK HOURS MASSACHUSETTS AVENUE 80 SECOND CYCLE



<u>LEGEND</u>

- COORDINATED PHASE(S) GREEN TIME
- NON-COORDINATED PHASE(S) GREEN TIME
- CLEARANCE TIME (YELLOW + RED)
- --- PHASE MOVEMENT
 - INTERSECTION—INTERSECTION COORDINATION BAND

NOTE:

1. ALL OFFSETS REFERENCED TO THE BEGINNING OF GREEN OF THE COORDINATED PHASES.

MASSACHUSETTS AVENUE AT FOSTER STREET/LINWOOD STREET COORDINATION DATA (ALL ENTRIES IN SECONDS)

	PLAN 1	PLAN 2
CYCLE LENGTH	120	80
OFFSET	109	74
SPLIT Ø2&Ø6	76	39
SPLIT Ø4&Ø8	18	15
PEDESTRIAN Ø9	26	26
COORDINATED PHASE	ø2&ø6	ø2 & ø6

MASSACHUSETTS AVENUE AT BATES ROAD/MARION ROAD COORDINATION DATA (ALL ENTRIES IN SECONDS)

	PLAN 1	PLAN 2
CYCLE LENGTH	120	80
OFFSET	0	0
SPLIT ø2&ø6	61	27
SPLIT Ø8	21	15
SPLIT Ø4	12	12
PEDESTRIAN Ø9	26	26
COORDINATED PHASE	ø2 & ø6	ø2 & ø6

DAILY & WEEKLY COORDINATION PROGRAM

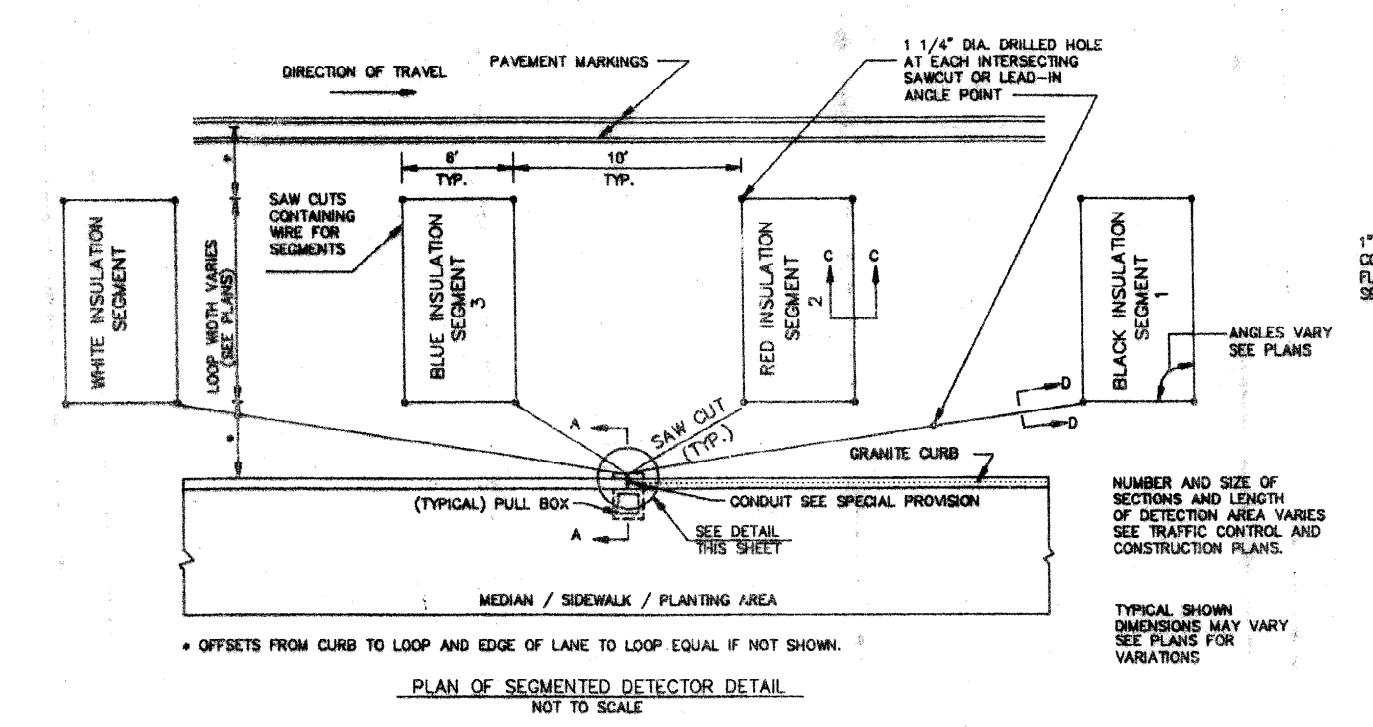
	MONDAY THRU FRIDAY	SATURDAY	SUNDAY
PLAN 1 120" CYCLE	0600-1000	_	Ι
PLAN 2 80" CYCLE	1500-1900	_	_
FREE OPERATION	0000-0600 1000-1500 1900-2400	0000-2400	0000-2400
FLASH OPERATION	_	_	_

ARLINGTON

MASSACHUSETTS AVENUE - ROUTE 2A/3 SHEET TOTAL NO. SHEETS STATE | FED. AID PROJ. NO.

MASS. 92 177 PROJECT FILE NO. 604687

TRAFFIC SIGNAL LOOP DETECTOR DETAILS



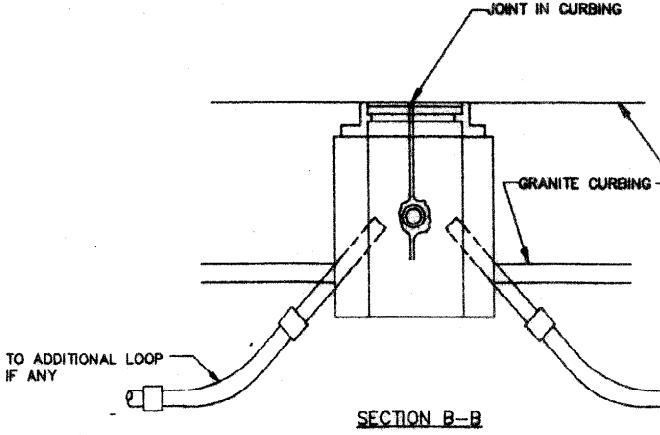
1" OR LARGER CONDUIT PLEXIBLE STEEL SEE SPECIAL PROV. GRANITE CURBING - FILL WIN ASPHALT JOINT SEALER (M.J.05.0) TYPICAL -12 x12 PULL BOX SD2.031 DETAIL - PLAN VIEW NOT TO SCALE

TOP OF BINDER OR EXISTING PAVEMENT -SURFACE COURSE 1 1/2" APPROVED FLEXIBLE SEALER. FOAM STRIP, SEE NOTE 7. 14 AWG LOOP WIRES. THIN STRANDED ENCASED IN PROTECTIVE PLASTIC TUBING

LOOPS IN BINDER COURSE OR EXISTING PAVEMENT TO UE RESURFACED

NOT TO SCALE

FILL WITH FILLER ----- PAVEMENT JOINT -1/2" RIGID PLASTIC CONDUIT 1-1/2" MIN VERTICAL SECTION TREATMENT AT PAVEMENT JOINTS NOT TO SCALE (LM.S.A. SPEC. NO. 51-5). SECTION C-C & D-D



NOT TO SCALE

EXISTING / PROPOSED PAVEMENT SURFACE FILL WITH APPROVED FLEXIBLE SEALER FOAM STRIP, SEE NOTE 7. 14 AWG LOOP WIRES. THIN STRANDED ENCASED IN PROTECTIVE PLASTIC TUBING (I.M.S.A. SPEC. NO. 51-5).

SECTION C-C & D-D LOCPS IN SURFACE COURSE NOT TO SCALE (FOR AREAS OUTSIDE LIMITS OF PAVEMENT WORK ONLY) TO CONTROL CABINET, PULL BOX

DRAWING AMENDED BY FAY, SPOFFORD & THORNDIKE, LLC

DETECTOR NOTES

- IN HANDHOLE, SPLICE ALL SEGMENTS TO TYPE II-SHIELDED LOOP DETECTOR LEAD-IN CABLE. SEGMENTS SHALL BE SPLICED IN PARALLEL, IN SERIES, OR IN A COMBINATION OF PARALLEL & SERIES AS SHOWN ON THE PLAN SHEET FOR EACH DETECTOR. HUMBER OF TURNS OF WIRE SHALL ALSO BE AS SHOWN ON THE PLAN SHEET FOR EACH DETECTOR, SEE NOTE 12.
- SEE SPECIAL PROVISIONS FOR REQUIREMENTS OF DETECTOR AMPLIFIER
- 3. LEAD IN WIRES SHALL BE TWISTED FROM SEGMENT TO SPLICE WITH SHIELDED CABLE FIVE TURNS PER FOOT. LEAD-IN SHALL BE TYPE II (MB. 16. II).
- BEFORE STARTING ANY SPLICING, THE ELECTRICAL CONTRACTOR SHALL FURNISH DATA SHEETS ON THE MATERIALS AND/OR METHODS TO BE USED IN ACCORDANCE WITH THE DEPARTMENTS STANDARD OPERATING PROCEDURES FOR APPROVAL OF SHOP DRAWINGS SEE SECTION 815.64, ESPECIALLY PARAGRAPH 1.
- THE METALLIC SHIELD WHICH SHALL ENCASE THE DETECTOR LEADS FROM A SPLICE (TYPICALLY LOCATED IN A PULL BOX NEAR THE ROADWAY COMPONENT OF THE DETECTOR) TO THE CONTROLLER, AND THE DRAIN WIRE UNDER THE METALLIC SHIELD, SHALL NOT BE GROUNDED TO THE EARTH GROUNDING BUSS IN THE CONTROLLER, AND THE SHIELD AND DRAIN WIRE SHALL BE CAREFULLY INSULATED FROM THE TRANSFORMER NEUTRAL OR FROM EARTH GROUND AT ALL POINTS ALONG ITS LENGTH. SPECIFICALLY, THIS INCLUDES CAREFUL INSULATION OF THE EXPOSED PORTION OF THE SHIELD AND THE DRAIN WIRE AT THE END AWAY FROM THE CONTROLLER WHERE IT IS SPLICED TO WIRES LEADING TO THE ROADWAY COMPONENT OF THE DETECTOR. THIS IS IMPORTANT TO AVOID A GROUND RETURN LOOP.
- 6. FILL ALL CONDUIT OPENINGS WITH DUCT SEAL
- AFTER SAW CUTS ARE COMPLETE, BLOW OUT WATER WITH OIL-FREE COMPRESSED AIR UNTIL CUTS ARE CLEAN AND DRY. INSERT WIRE INTO CLEAN SLOT WITH A BLUNT, SMOOTH, ROUND EDGED TOOL OF WOOD OR PLASTIC SUCH AS A PAINT STIRRER. DO NOT USE A SCREWORIVER, THEN INSERT FOAM PLASTIC HOLD DOWN STRIPS, SIMILAR TO ETHA FOAM SB. STRIPS SHALL BE ABOUT 2" LONG, PLACED IN THE SLOT ABOUT EVERY 2 FEET THEN POUR SEALER, TAKING CARE TO ELIMINATE BUBBLES.
- THE COMBINED ROADWAY LOOP, TWISTED LEAD-IN WIRES, SPLICE AND SHIELDED LEAD-IN CABLE SHALL HAVE A RESISTANCE TO GROWND OF AT LEAST 100 MEGOHNS. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
- 9. FOR INSTALLATION OF SINGLE (ONE SEGMENT) SMALL WIRE LOOP DETECTOR DETAIL IS THE SAME
- 10. CUT LOOPS IN BINDER AND FILL WITH APPROVED FLEXIBLE SEALER.
- DETECTOR WIRE SHALL BE A DIFFERENT COLOR FOR EACH SEGMENT OF A DETECTOR GROUP. SEE DETAIL
- 12. SPLICING PATTERN P SERIES/PARALLEL: SPLICE SEGMENTS 1 AND 3 OF AN INDIVIDUAL DETECTOR IN SERIES. SPLICE SEGMENTS 2 AND 4 IN SERIES. SPLICE THE RESULTANT TWO GPULLPS IN PARALLEL SPLICE THE RESULTANT COMBINATION TO ONE LEAD-IN CABLE. CONNECT THIS CABLE TO AN OTHERWISE UNUSED AMPLIFIER CHANNEL.

SPLICING PATTERN S - SERIES: SPLICE ALL SEGMENTS (TYPICALLY FOUR, BUT MAY BE LESS) OF AN INDIVIDUAL DETECTOR IN SERIES. SPLICE THE RESULTANT COMBINATION TO ONE LEAD-IN CABLE TO AN OTHERWISE UNUSED AMPLIFIER CHANNEL THE CONTRACTOR SHALL ENSURE THAT LOOP DETECTOR SAWCUTS WILL NOT

AVOID DISTURBING THE CONCRETE SLAB.

COURSES. THE CONTRACTOR MAY INSTALL LOOPS IN THE SURFACE COURSE TO

REVISED 1/31/90 DISTURB THE EXISTING CONCRETE SLAB LOCATED BELOW THE EXISTING PAVEMENT

FS&T DWG. NO. QA-013

ENGINEER IN CHARGE

1/2" RIGID PLASTIC CONDUIT-

(TYPICAL)

SPLICE SEE NOTE 12

3" CONDUIT

FOR DETAIL

12"x 12" PULL BOX

SECTION A-A

NOT TO SCALE

PLAN

TREATMENT AT

GRANITE CURBING

WIRES IN SAW CUTS

IF ANY

CONDUIT

PAVEMENT JOINTS NOT TO SCALE

LOOP WINES ___

ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3 SHEET TOTAL NO. SHEETS SAWCUT CONTAINING STATE FED. AID PROJ. NO. TYPE Q WIRE SEGMENTS 93 MASS. 177 SEE NOTE 9 INSTALLATION DETAILS WINDING DETAILS PROJECT FILE NO. 604687 – 1.2 IN DIA. DRILL HOLE AT EACH INTERSECTING SAWCUT OR LEAD-IN TRAFFIC SIGNAL LANE LINE **BICYCLE LOOP DETECTOR DETAILS** 1 TURN 23 FT (TYP) SIGN R10-22 23 FT (TYP) (2 LAYERS) (TYP) 18 IN DIRECTION NOTES: DIRECTION OF TRAVEL OF TRAVEL 2 TURNS 1. REFER TO VEHICLE LOOP DETECTOR DETAIL SHEET (2 LAYERS) FOR ADDITIONAL NOTES AND CONSTRUCTION DETAILS. 2. ALL DETAILS ARE GRAPHICAL WITH NO SCALE. PROP WHITE BICYCLE LEGEND 3. THE NUMBER, SIZE, LOCATION AND LENGTH OF LANE LINE 1 TURN PROP 4 IN WHITE LINE DETECTION AREA VARIES AND SHALL BE DETERMINED (2 LAYERS) BY THE DESIGNER REFER TO TRAFFIC SIGNAL PLAN. 2.5 'B' 0.8 IN LINE (TYP) -EDGE OF ROAD -SHOULDER BICYCLE LOOPS SHALL BE CONNECTED TO SEPARATE START FINISH LOOP DETECTOR AMPLIFIERS CAPABLE OF HIGHER LEVELS OF SENSITIVITY. TYPE Q DETECTOR-STANDARD QUADRUPOLE TYPE Q DETECTOR WITH STANDARD PAVEMENT MARKINGS AND SIGNING BICYCLE LOOPS SHALL BE INSTALLED IN THE BASE SIGN BORDER: WHITE BACKGROUND SIGN R10-22 COURSE OF EXISTING PAVEMENT. THE EXISTING R=1.5. TH=0.5. INS=.38 BLACK LEGEND AND LINES PAVEMENT SHALL BE COLD PLANED TO THE BASE COURSE AND SAWCUT FOR LOOP INSTALLATION. NOTE: ALL SIGN DIMENSIONS IN INCHES NOTE: SIGN PANEL NOT SHOWN TO SCALE 6. SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED FOR ALL BICYCLE DETECTORS TO INFORM CYCLISTS OF LANE LINE THE DETECTION AREA. 1 TURN (4 LAYERS) 3/4 L * 7. OFFSETS FROM LANE LINE EQUAL UNLESS OTHERWISE 2 TURNS (4 LAYERS) NOTED. SEE PLANS. 1/4 L8. TYPE Q DETECTORS SHALL BE WIRED IN A FIGURE EIGHT PATTERN WITH A DOUBLE LAYER DESIGN 2 TURNS (4 LAYERS) DIRECTION 1/4 L ("2-4-2") WITH 2 TURNS IN THE PERIMETER SLOTS DIRECTION ÀND 4 TURNS IN THE CENTER SLOT AS SHOWN IN THE WINDING DETAIL. OF TRAVEL OF TRAVEL 1/4 L 2 TURNS (4 LAYERS) 1/4 L 9. BICYCLES WILL BE DETECTED WITHIN 4 IN. OF THE INTERIOR LONGITUDINAL LOOP WIRES FOR TYPE Q AND TOP OF PROPOSED D-Q DETECTORS. PAVEMENT 1 TURN (4 LAYERS) 🕽 10. PROVIDE 3 TURNS FOR TYPE D-1 DETECTORS. START EDGE OF ROAD -SEE NOTE 7 (TYP) SURFACE COURSE FINISH 11. INSTALL 2 LAYERS OF WIRE WOUND IN THE SAME 1.5 IN DIRECTION IN BOTH LAYERS FOR TYPE D-2 DETECTORS. SIGN R10-22 THE RESULT IS 4 TURNS IN EACH DIAGONAL. TYPE D-Q DETECTOR-DOUBLE QUADRUPOLE - APPROVED FLEXIBLE TYPE D-Q DETECTOR SEALER 12. RIGHT JUSTIFIED LOOP DETECTORS SHALL BE SAWCUT CONTAINING TYPE CONSIDERED FOR THE FOLLOWING CONDITIONS: D-Q WIRE SEGMENTS FOAM STRIP a) BICYCLE STOPPING ON THE RIGHT SIDE OF A SEE NOTE 9 THRU TRAVEL LANE. #14 AWG LOOP WIRES LANE LINE b) BICYCLE STOPPING ON THE RIGHT SIDE OF AN THHN STRANDED ENCASED EXCLUSIVE LEFT TURN LANE. IN PROTECTIVE PLASTIC TUBING MOTOR VEHICLE LOOP DETECTOR ---(I.M.S.A. SPEC. NO. 51-5) 13. LEFT JUSTIFIED LOOP DETECTORS SHALL BE (VARIES SEE TABLE) CONSIDERED FOR THE FOLLOWING CONDITIONS: a) BICYCLE STOPPING ON THE LEFT SIDE OF A SHARED LEFT/THRU LANE. BICYCLE STOPPING JUST TO THE RIGHT OF SECTION THRU LOOP DETECTOR DIRECTION THE CENTERLINE WHEN TURNING LEFT ON A OF TRAVEL TWO-LANE ROADWAY. DIRECTION SAWCUT SLOT DEPTH GUIDE 14. RECTANGULAR LOOP DETECTORS SHALL BE CONSIDERED OF TRAVEL FOR BICYCLES STOPPING ON EITHER THE LEFT OR SLOT SIZE RIGHT SIDE OF A TWO-LANE ROADWAY. THE MINIMUM TURNS OF WIRE OFFSET FROM LANE LINE OR CURB LINE SHALL BE 1.0 FT. START DEPTH (IN) WIDTH (IN) LANE LINE 15. PAVEMENT CORES OR TEST PITS MAY BE REQUIRED 0.5 1.5 TO DETERMINE THE DEPTH OF EXISTING PAVEMENT FINISH └1.0 FT (MIN) AND CONFIRM THAT THE DETECTION OPTION CHOSEN 1.5 0.5 EDGE OF ROAD SHOULDER AND CORRESPONDING WINDING PATTERN CAN BE SIGN R10-22 1.5 0.5 ACCOMMODATED. _SAWCUT_CONTAINING TYPE D-1 DETECTOR RIGHT JUSTIFIED (SEE NOTE 12) 2.0 0.5 TYPE D-1 WIRE SEGMENTS 4 16. THESE DETAILS APPLY TO BICYCLE LOOPS INSTALLED IN ROADWAYS. PUSH BUTTON ACTUATION SHALL BE TYPE D-1 AND D-2 DETECTORS 2.0 0.5 CONSIDERED FOR RECREATIONAL BIKE PATHS. SAWCUT CONTAINING TYPE (TYPE D1 SHOWN) 0.5 2.0 17. THE MINIMUM DIMENSION FOR L SHALL BE 6 FT D-2 WIRE SEGMENTS MIN. FOR DETECTORS TYPE D-Q, D-1 & D-2. FINAL 2.0 0.5 LANE LINE DIMENSIONS SHALL BE DETERMINED BY THE 2.0 0.5 ─ 1.0 FT (MIN) MOTOR VEHICLE LOOP DETECTOR-VÅRIES SEE NOTÉ 17) THE CONTRACTOR SHALL ENSURE THAT LOOP DETECTOR SAWCUTS WILL NOT DISTURB THE EXISTING CONCRETE SLAB LOCATED BELOW THE EXISTING PAVEMENT COURSES. THE CONTRACTOR MAY INSTALL LOOPS IN THE SURFACE COURSE TO DIRECTION DIRECTION AVOID DISTURBING THE CONCRETE SLAB. OF TRAVEL OF TRAVEL NOTE: REVISED FEBRUARY 22, 2006 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 FINISH | START LANE LINE ─ SHOULDER EDGE OF ROAD DRAWING AMENDED BY FAY, SPOFFORD & THORNDIKE, LLC PROPOSED AREA OF DETECTION LEFT JUSTIFIED (SEE NOTE 13) TYPE D-2 DETECTOR A LARGER AREA OF DETECTION MAY BE REQUIRED -TYPE D-1 AND D-2 DETECTORS BASED ON FIELD CONDITIONS AND SHALL BE MASSACHUSETTS HIGHWAY DEPARTMENT SIGN R10-22 DETERMINED BY THE DESIGNER. (TYPE D2 SHOWN) TRAFFIC ENGINEERING REVISED FEBRUARY 22, 2006

FS&T DWG. NO.

QA-013

ENGINEER IN CHARGE

STATE FED. AID PROJ. NO. SHEET NO. SHEET:

MASS. 94 177

PROJECT FILE NO. 604687

TRAFFIC SIGNAL DETAILS
TYPE II MAST ARMS
INDEX AND NOTES

MAST ARM & FOUNDATION Details Standard Drawings

NOTES

- 1. For these standard drawings the Design Wind Speed for all Mast Arm Structures shall be 130 MPH.
- 2. For these standard drawings the Design Wind Speed for mast arm foundations located in the following counties: Plymouth, Bristol, Barnstable, Dukes, and Nantucket counties in District 5 and Berkshire county in District 1 shall be 130 MPH. The design wind speed for mast arm foundations for the remainder of the state shall be 110 MPH.
- 3. For these standard drawings the mast arm structure design life shall be 25 years.
- 4. For these standard drawings the Fatigue Category no. 2 was used and truck induced gusts were excluded in the design.
- 5. These standard drawings do not apply for mast arm structures at intersections with an ADT greater than 40,000 vehicles and a truck percentage of greater than 10%. The responsibility for the design of mast structures and foundations will rest with the design engineer. The structure design life will be 50 years and the fatigue category shall be no. 1. The design wind speed criteria shall be as shown in Notes Nos. 1 & 2. The design will be submitted to MassDOT for review and comment.
- 6. For strain pole, dual mast arm designs, or mast arms longer than 45 feet, notes 1, 2, 3 and 4 will apply, if ADT (>40,000 vehicles) and truck percentage (10%) criterion is met, note 5 design criteria (50 year design life, fatigue category no. 1, wind design speed notes 1 and 2) will apply. The responsibility for the design of these structures and foundations will rest with the design engineer. The design will be submitted to MassDOT for review and comment.



				*
NO.	REVISION	DATE	MASSACHUSETTS DEPARTMENT OF TRA HIGHWAY DIVISON	NSPORTATION
			RECOMMENDED FOR APPRO	VAL
		4	Meil E. Bowsheav	2/11/11
			TRAFFIC ENGINEER	DATE
			agent Manlag P.E.	c/17/11
			BRIDGE ENGINEER	DATE
			Anne a. announts	1/24/2011
			CHIEF ENGINEER	DATE

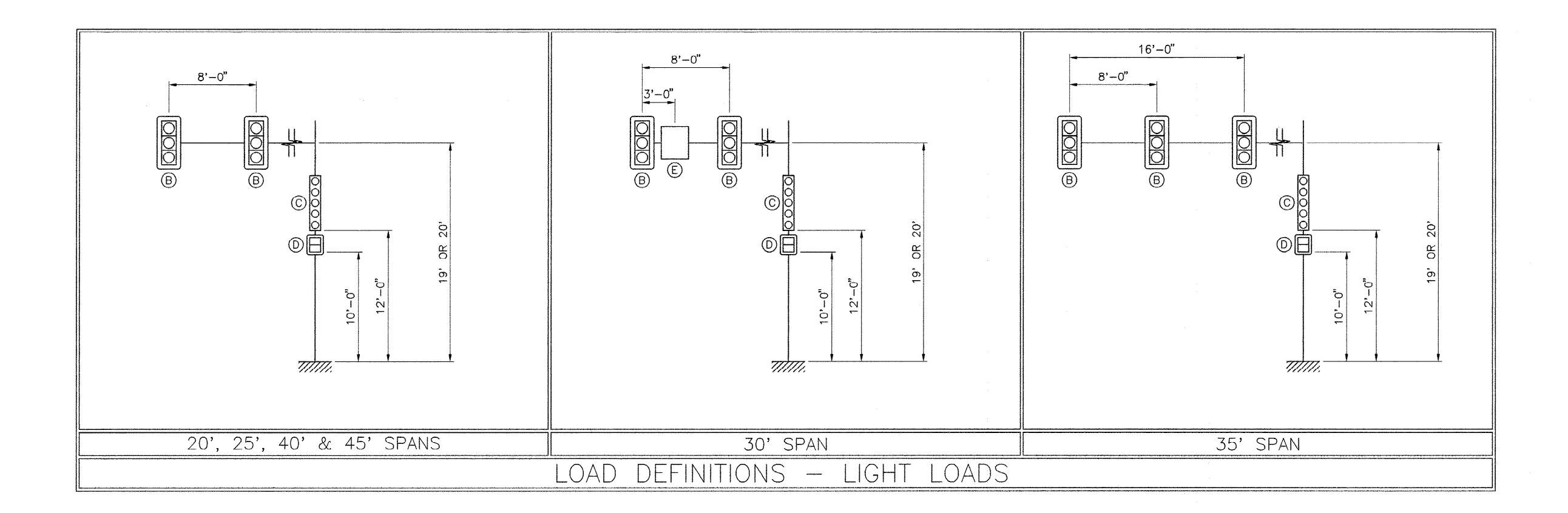
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QA-013

DES _ CHK _

DR _ CHK _

EST _ CHK _



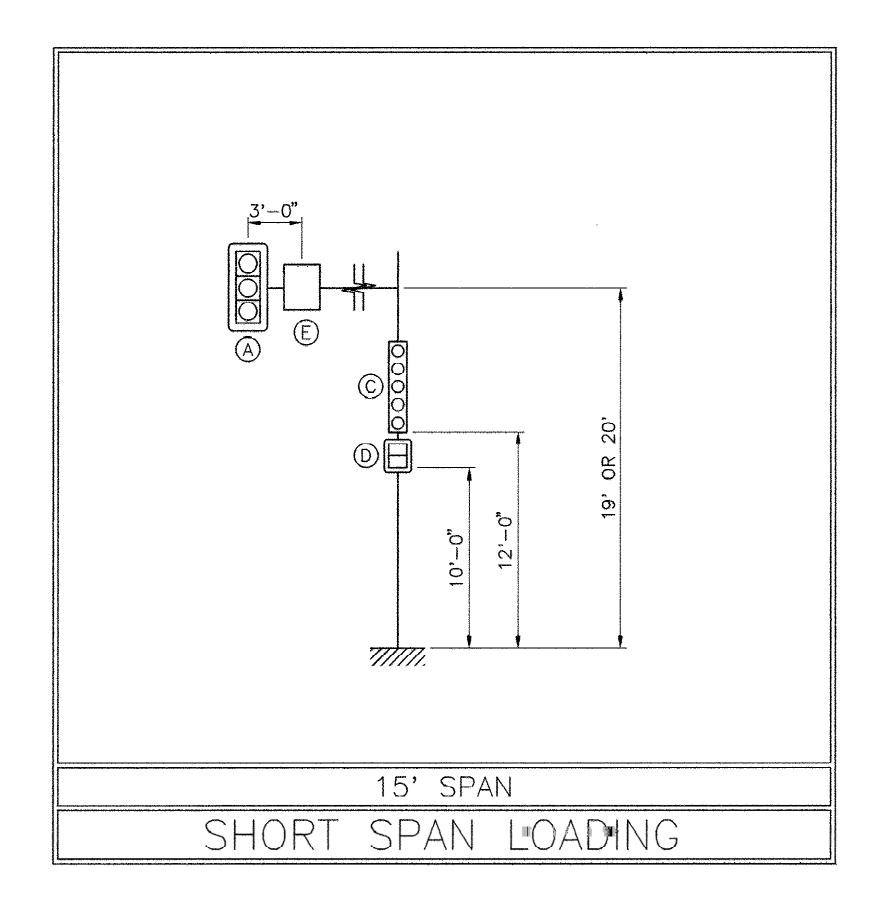
STATE FED. AID PROJ. NO. SHEET NO. S

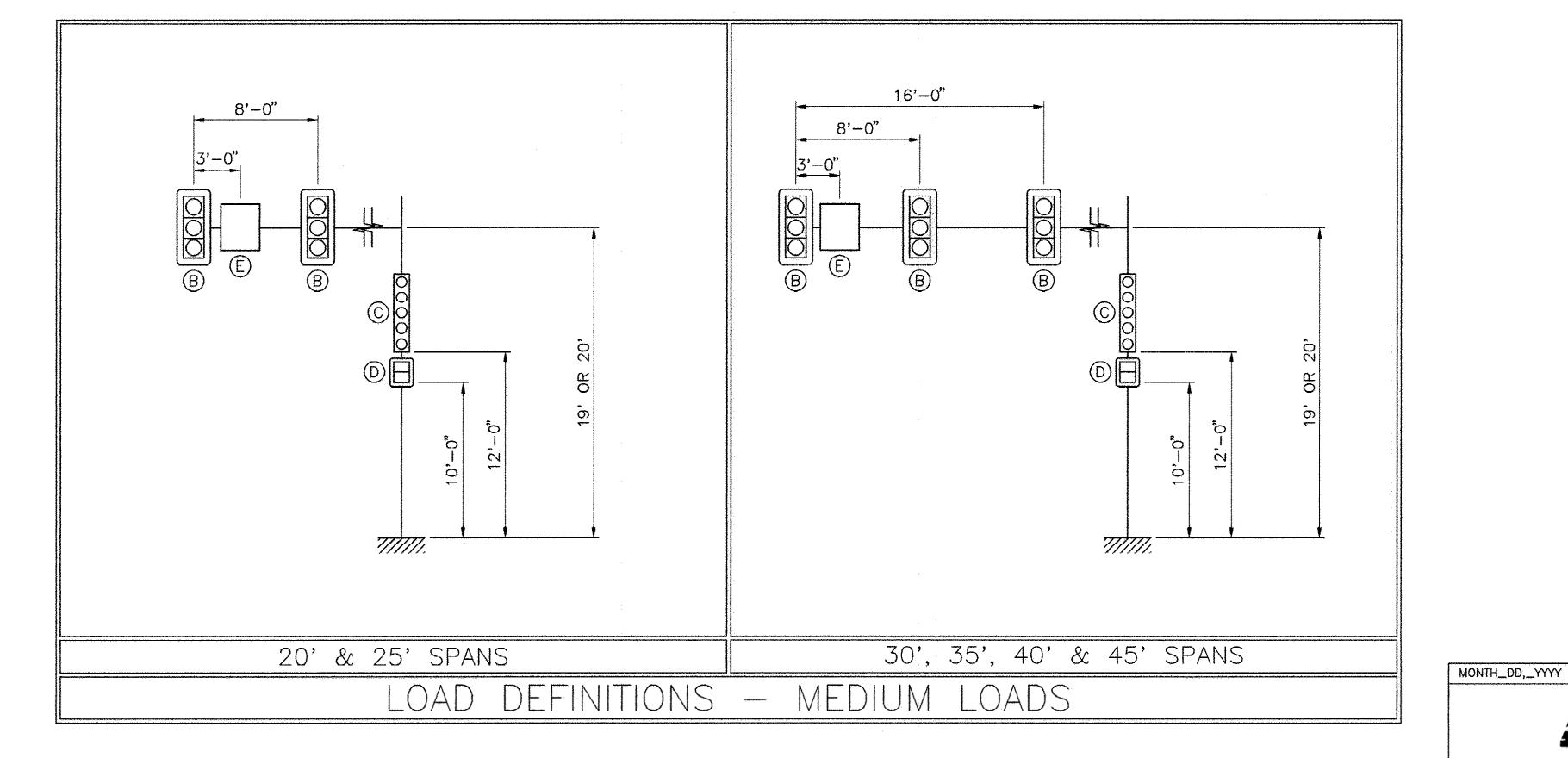
TRAFFIC SIGNAL DETAILS

TYPE II MAST ARMS

LIGHT, MEDIUM & SHORT SPAN

LOAD DIAGRAMS





DEVICE	DESCRIPTION	PROJ. AREA (FT~2)	WEIGHT (LBS)					
A	3 SECTION, 3 WAY SIGNAL	13.50	202					
B	3 SECTION, 1 WAY SIGNAL	8.67	74					
0	5 SECTION, 1 WAY SIGNAL	13.33	110					
D	DUAL PEDESTRIAN SIGNAL	8.00	80					
E	30" X 36" RECULATORY SICN	7.50	23					
NOTE: ALL SIGNALS HAVE 5.0" BACKPLATES								

FS&T DWG. NO.

ISSUED FOR CONSTRUCTION

Moving Massachusetts Forward.

STANDARD DRAWINGS

TYPE II MAST ARMS
LIGHT, MEDIUM & SHORT SPAN
LOAD DIAGRAMS

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

CHIEF ENGINEER

BRIDGE ENGINEER

TRAFFIC ENGINEER

SHEET 2 OF 5 SHEETS

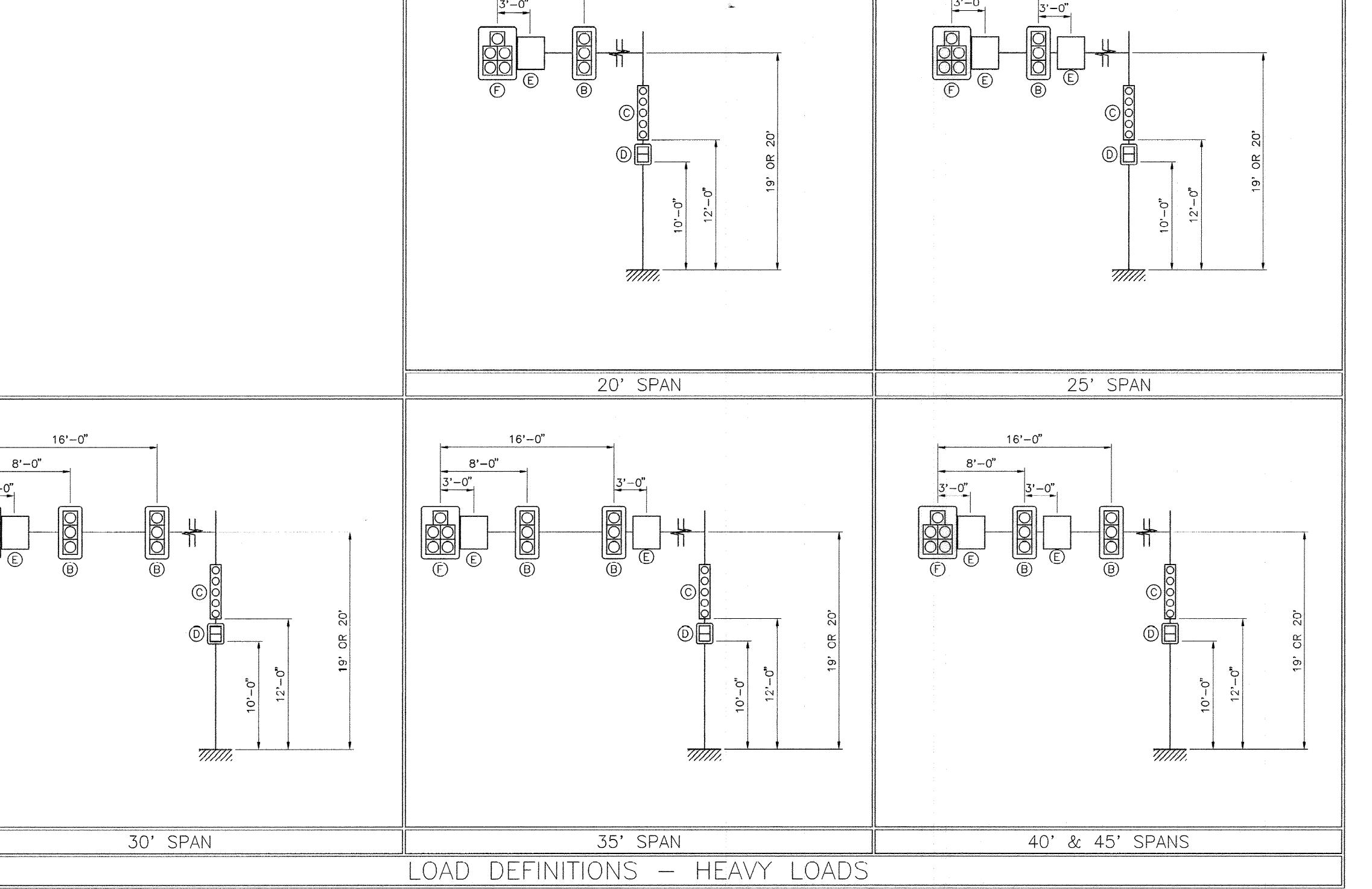
[Michal_J] - April 19, 2013 - 3:54pm - T:\QA-013 Mass Ave_Arlington\Drawings\QA-013_Traffic Details - Type II Mast Arms.dwg [LOAD DIAG. - LIGHT-MED-SHORT]

STATE FED. AID PROJ. NO. SHEET NO. SHEETS

MASS. 96 177

PROJECT FILE NO. 604687

TRAFFIC SIGNAL DETAILS
TYPE II MAST ARMS
HEAVY LOAD DIAGRAMS



DEVICE	DESCRIPTION	PROJ. AREA (FT^2)	WEIGHT (LBS)					
A	3 SECTION, 3 WAY SIGNAL	18.29	202					
B	3 SECTION, 1 WAY SIGNAL	8.67	74					
	5 SECTION, 1 WAY SIGNAL	13.33	110					
0	DUAL PEDESTRIAN SIGNAL	8.00	80					
E	30" X 36" REGULATORY SIGN	7.50	23					
F 5 SECTION, 2 WAY SIGNAL 21.95 215								
NOTE: ALL SIGNALS HAVE 5.0" BACKPLATES								

FS&T DWG. NO.

STANDARD DRAWINGS

TYPE II MAST ARMS
HEAVY LOAD DIAGRAMS

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

TANKLE ENGINEER

CHIEF ENGINEER

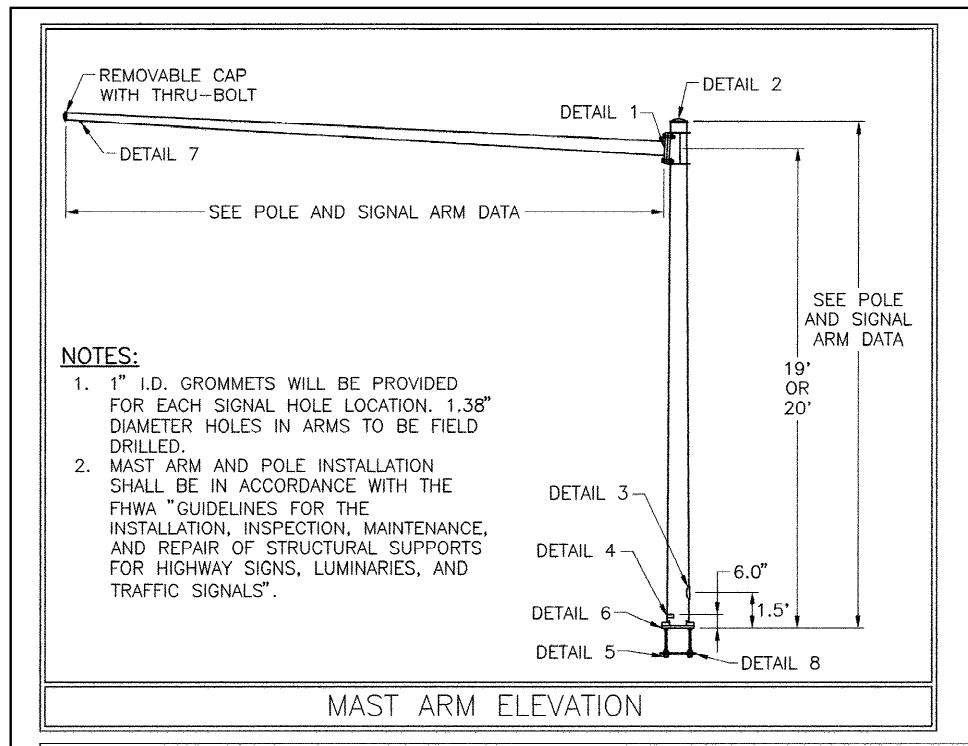
TRAFFIC ENGINEER

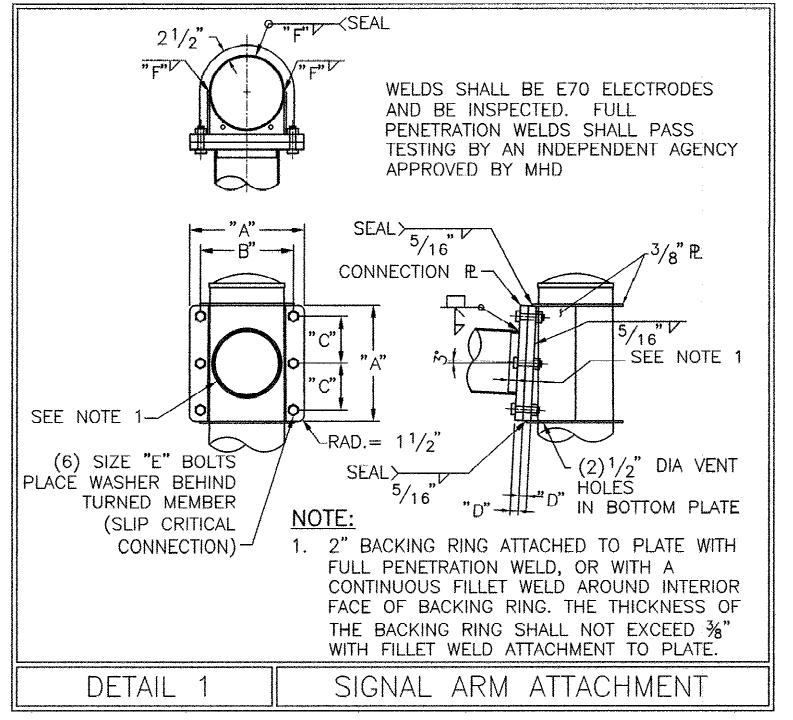
SHEET 3 OF 5 SHEETS

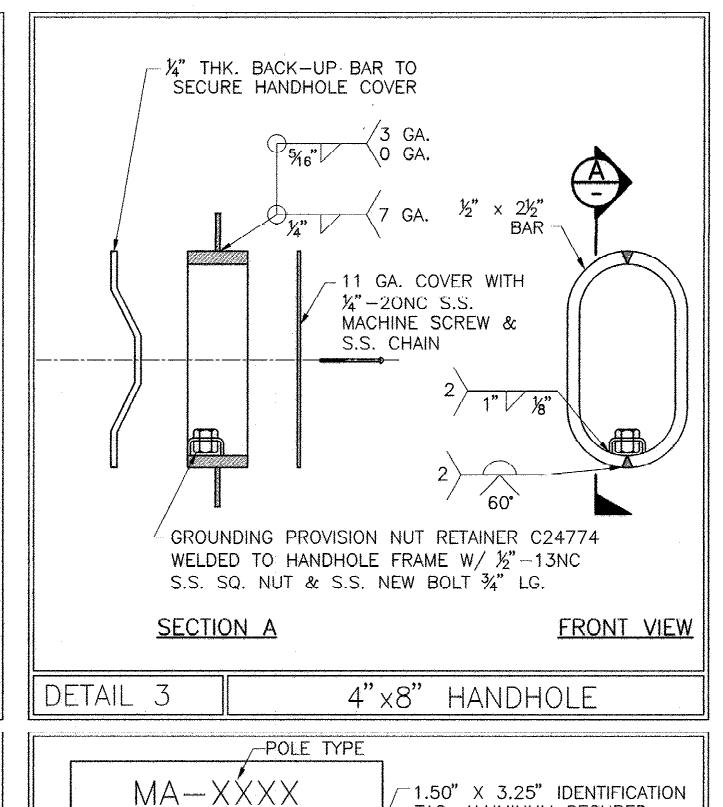
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ISSUED FOR CONSTRUCTION

[Michal_J] - April 19, 2013 - 3:57pm - T:\QA-013 Mass Ave_Arlington\Drawings\QA-013_Traffic Details - Type II Mast Arms.dwg [LOAD DIAG. - HEAVY]







XXX-XX

DETAIL 4

1.50" X 3.25" IDENTIFICATION

0.19" RIVETS 6.0" UP FROM

TAG, ALUMINUM SECURED

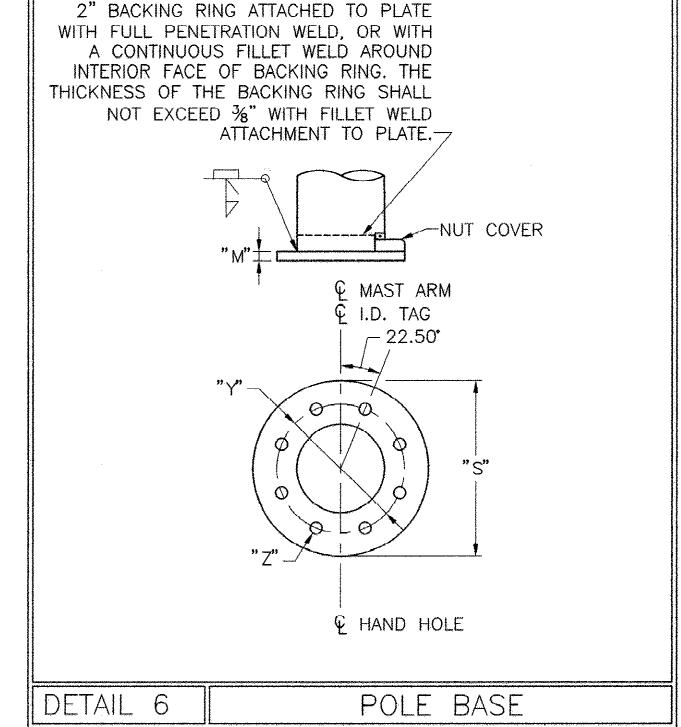
TO POLE SHAFT WITH (2)

BASE AND STAMPED AS

SHOWN

I.D. TAG

MANUFACTURER MAST ARM LENGTH



ARLINGTON

MASSACHUSETTS AVENUE - ROUTE 2A/3

PROJECT FILE NO. 604687

TRAFFIC SIGNAL DETAILS

TYPE II MAST ARMS

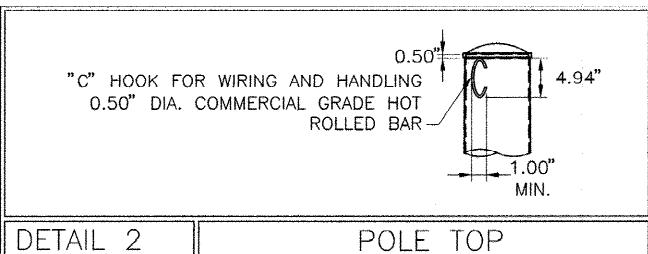
STATE FED. AID PROJ. NO.

MASS.

SHEET TOTAL NO. SHEETS

97 177

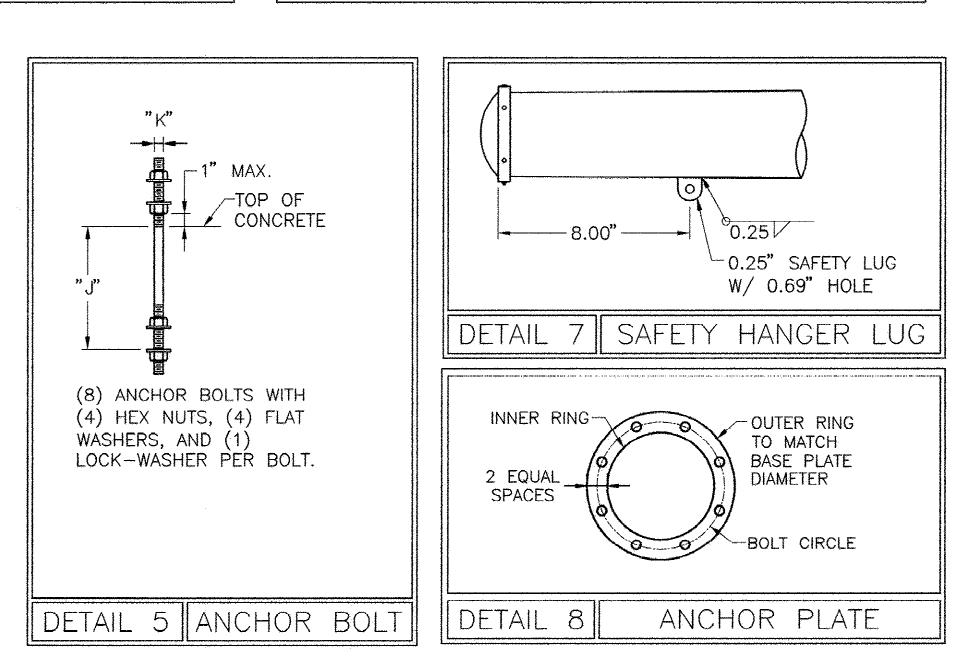
	MA	TERI	AL DATA		
COMPONENT	DESIGNATION	YIELD (KSI)	COMPONENT	DESIGNATION	YIELD (KSI)
POLE TUBE	ASTM A595 GR. A	55	ARM TUBE	ASTM A595 GR. A	55
POLE BASE PLATE	AASHTO M270	50	ARM CONNECTION PLATE	AASHTO M270	50
ANCHOR BOLTS	AASHTO M314	55	ARM CONNECTING BOLTS	AASHTO M164 **	
GALVANIZING	AASHTO M111 OR M232				
** BOLTS WHICH	ACCUMULATE RUST OR DIF	RT SHAI	L BE DISCARDED.	······································	

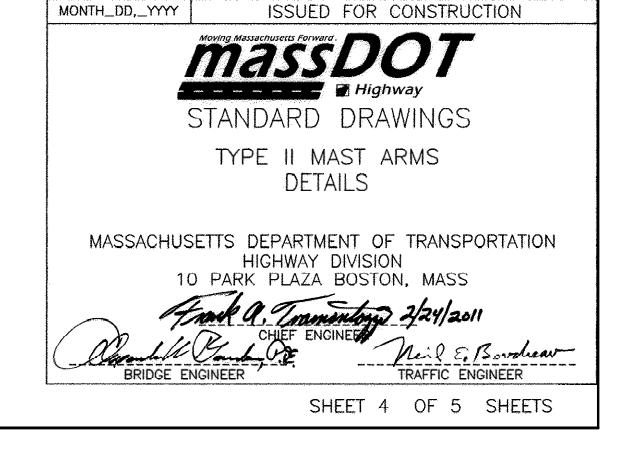


							POLE	AND S	SIGNAL	ARM	DATA	- LIG	HT L	DADS						***************************************
		SIGNAL AI	RM TUBE			POLE	TUBE			POLE E	BASE		ANCHO	OR BOLT		SIGNAL A	RM ATTAC	CHMENT	DATA	
LOCATIONS	SPAN (FT)	FIXED END DIA. (IN)	FREE END DIA. (IN)	WALL THK.	BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	WALL THK.	PLATE CIRCLE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	DIA. "K" (IN)	EMBED. LENGTH "J" (IN)	"A" (IN)	"B" (IN)	"C" (IN)	"D" (IN)	"E" (IN)	"F" (IN)
	15.00	9.00	6.90	7 GA.	12.00	9.06	21.00	7 GA.	29.50	24.00	1.50	1.813	1,50	36.00	19.00	15.00	7.50	1.00	1.00	0.188
	20.00	9.00	6.20	7 GA.	12.00	9.06	21.00	7 GA.	29.50	24.00	1.50	1.813	1.50	36.00	19.00	15.00	7.50	1.00	1.00	0.188
	25.00	10.00	6.50	7 GA.	13.00	10.06	21.00	7 GA.	29.50	24.00	1.50	1.813	1.50	36.00	20.00	16.00	8.00	1.00	1.00	0.188
	30.00	12.50	8.30	3 GA.	15.50	12.56	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	23.50	19.00	9.50	1.25	1.25	0.250
	35.00	13.00	8.10	3 GA.	16.00	13.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	24.50	20.00	10.00	1.25	1.25	0.250
	40.00	13.00	7,40	3 GA.	16.00	13.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	24.50	20.00	10.00	1.25	1.25	0.250
	45.00	13.50	7.20	3 GA.	16.50	13.56	21.00	3 GA.	29,50	24.00	1.50	1.813	1.50	36.00	27.50	22.00	11.00	1.50	1.50	0.313

						Р	OLE A	ND SI	GNAL	ARM [ATA ·	- MED	DIUM L	_OADS			· ·			
		SIGNAL AF	RM TUBE			POLE	TUBE			POLE E	BASE		ANCHO	R BOLT		SIGNAL A	RM ATTA	CHMENT I	DATA	
LOCATIONS	SPAN (FT)	FIXED END DIA. (IN)	FREE END DIA. (IN)	WALL THK.	BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	WALL THK.	PLATE CIRCLE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	DIA. "K" (IN)	EMBED. LENGTH "J" (IN)	"A" (IN)	"B" (IN)	"C" (IN)	"D" (IN)	"E" (IN)	"F" (IN)
	15.00	9.00	6.90	7 GA.	12.00	9.06	21.00	7 GA.	29.50	24.00	1.50	1.813	1.50	36.00	19.00	15.00	7.50	1.00	1.00	0.188
	20.00	10.00	7.20	3 GA.	13.00	10.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	20.00	16.00	8.00	1.00	1.00	0.250
	25.00	11.00	7.50	3 GA.	14.00	11.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	23.50	19.00	9.50	1.25	1.25	0.250
	30.00	13.00	8.80	3 GA.	16.00	13.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	23.50	19.00	9.50	1.25	1.25	0.250
	35.00	14.00	9.10	3 GA.	17.00	14.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	27.50	22.00	11.00	1.50	1.50	0.250
	40.00	15.00	9.40	3 GA.	18.00	15.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	27.50	22.00	11.00	1.50	1.50	0.250
	45.00	16.00	9.70	O GA.	19.00	16.06	21.00	O GA.	29.50	24.00	1.50	1.813	1.50	36.00	29.50	24.00	12.00	1.75	1.50	0.313

 		SIGNAL A	RM TUBE			POLE	TUBE			POLE E	BASE		ANCHO	OR BOLT		SIGNAL A	RM ATTA	CHMENT	DATA	
LOCATIONS	SPAN (FT)	FIXED END DIA. (IN)	FREE END DIA. (IN)	WALL THK.	BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	WALL THK.	PLATE CIRCLE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	DIA. "K" (IN)	EMBED. LENGTH "J" (IN)	"A" (IN)	"B" (IN)	"C" (IN)	"D" (IN)	"E" (IN)	"F" (IN)
	15.00	9.00	6.90	7 GA.	12.00	9.06	21.00	7 GA.	29.50	24.00	1.50	1.813	1.50	36.00	19.00	15.00	7.50	1.00	1.00	0.18
	20.00	12.50	9.70	3 GA.	15.50	12.56	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	24.00	19.00	9.50	1.25	1.25	0.25
	25.00	14.00	10.50	3 GA.	17.00	14.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	27.50	22.00	11.00	1.50	1.50	0.25
	30.00	15.50	11.30	3 GA.	18.50	15.56	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	27.50	22.00	11.00	1.50	1.50	0.25
	35.00	16.50	11.60	O GA.	19.50	16.56	21.00	O GA.	34.50	28.00	1.75	2.063	1.75	36.00	29.50	24.00	12.00	1.75	1.50	0.31
	40.00	17.50	11.90	O GA.	20.50	17.56	21.00	O GA.	34.50	28.00	1.75	2.063	1.75	36.00	29.50	24.00	12.00	1.75	1.50	0.31
	45.00	18.50	12.20	O GA.	21.50	18.56	21.00	O GA.	34.50	28.00	1.75	2.063	1.75	36.00	31.50	26.00	13.00	2.00	1.50	0.31





QA-013

FS&T DWG. NO.

ENGINEER IN CHARGE

			P	ER FOUN	DATIONS	FOR 110 M	1PH WIND	SPEED 2	ZONE			
					LIGH	HT LOADING	CONDITION	ONS				
	15	' & 20' MAST	ARMS	25	' & 30' MAST	ARMS	35	'& 40' MAST	ARMS		45' MAST AR	MS
SOIL TYPE	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'-6"	6'-0"	18-#8	3'-6"	8'-0"	18-#8	3'-6"	8'-0"	18-#8	3'-6"	9'-0"	18-#8
WET SAND	3'-6"	7'-0"	18-#8	3'-6"	9'-0"	18-#8	3'6"	9'-0"	18-#8	3'-6"	9'-0"	18-#8
CLAY (MEDIUM STIFF)	3'-6"	11'-0"	18-#8	3'-6"	12'-0"	18-#8	3'-6"	12'-0"	18-#8	3'-6"	12'-0"	18-#8
ALLUVIAL	3'-6"	8'-0"	18-#8	3'-6"	10'-0"	18-#8	3'-6"	10'-0"	18-#8	3'-6"	11'-0"	18-#8
					MEDI	UM LOADIN	G CONDIT	IONS				
	15	' & 20' MAST	ARMS	25	' & 30' MAST	ARMS	35	'& 40' MAST	ARMS		45' MAST AR	MS
SOIL TYPE	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'-6"	7'-0"	18-#8	3'-6"	9-0"	18-#8	4'-0"	9-0"	18-#9	4'-6"	8'-0"	18-#10
WET SAND	3'-6"	8'-0"	18-#8	3'-6"	9'-0"	18-#8	4'-0"	10'-0"	18-#9	4'-6"	9'-0"	18-#10
CLAY (MEDIUM STIFF)	3'-6"	11'-0"	18-#8	3'-6"	12'-0"	18-#8	4'-0"	13'-0"	18-#9	4'-6"	14'-0"	18-#10
ALLUVIAL	3'-6"	9'-0"	18-#8	3'-6"	10'-0"	18-#8	4'-0"	11'-0"	18-#9	4'-6"	10'-0"	18-#10
					HEA	VY LOADING	CONDITI	ONS				
	15	'& 20' MAST	ARMS	25	'& 30' MAST	ARMS	35	'& 40' MAST	ARMS		45' MAST AR	MS
SOIL TYPE	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'-6"	8'-0"	18-#8	4'-0"	9'-0"	18-#9	4'-6"	10'-0"	18-#10	5'-0"	9'-0"	23-#10
WET SAND	3'-6"	8'-0"	18-#8	4'-0"	10'-0"	18-#9	4'-6"	11'-0"	18-#10	5'-0"	10'-0"	23-#10
CLAY (MEDIUM STIFF)	3'-6"	12'-0"	18-#8	4'-0"	14'-0"	18-#9	4'-6"	15'-0"	18-#10	5'-0"	16'-0"	23-#10
ALLUVIAL	3'-6"	10'-0"	18-#8	4'-0"	11'-0"	18-#9	4'-6"	12'-0"	18-#10	5'-0"	12'-0"	23-#10

			PIE	R FOUND	ATIONS F	OR 130 M	PH WIND	SPEED Z	ONE			
					LIGH	HT LOADING	CONDITIC	NS				
	15'	& 20' MAST	ARMS	25'	& 30' MAST	ARMS	35	' & 40' MAST	ARMS		45' MAST ARI	MS
SOIL TYPE	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'-6"	7'-0"	18-#8	3'-6"	9'-0"	18-#8	3'-6"	10'-0"	18-#8	3'-6"	10'-0"	18-#8
WET SAND	3'-6"	8'-0"	18-#8	3'-6"	10'-0"	18-#8	3'-6"	11'-0"	18-#8	3'-6"	11'-0"	18-#8
CLAY (MEDIUM STIFF)	3'-6"	12'-0"	18-#8	3'-6"	13'-0"	18-#8	3'-6"	13'-0"	18-#8	3'-6"	13'-0"	18-#8
ALLUVIAL	3'-6"	9'-0"	18-#8	3'-6"	12'-0"	18-#8	3'-6"	12'-0"	18-#8	3'-6"	13'-0"	18-#8
					MEDI	UM LOADING	G CONDITI	ONS				
	15'	& 20' MAST	ARMS	25'	& 30' MAST	ARMS	35	' & 40' MAST	ARMS		45' MAST ARI	MS
SOIL TYPE	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'-6"	8'-0"	18-#8	3'-6"	10'-0"	18-#8	4'-0"	11'-0"	18-#9	4'-6"	10'-0"	18-#10
WET SAND	3'-6"	8'-0"	18-#8	3'-6"	11'-0"	18-#8	4'-0"	12'-0"	18-#9	4'-6"	11'-0"	18-#10
CLAY (MEDIUM STIFF)	3'-6"	12'-0"	18-#8	3'-6"	14'-0"	18-#8	4'-0"	15'-0"	18-#9	4'-6"	15'-0"	18-#10
ALLUVIAL	3'-6"	10'-0"	18-#8	3'-6"	13'-0"	18-#8	4'-0"	13'-0"	18-#9	4'-6"	12'-0"	18-#10
					HEA	VY LOADING	CONDITIO	DNS				
	15'	& 20' MAST	ARMS	25'	& 30' MAST	ARMS	35	' & 40' MAST	ARMS		45' MAST ARI	VIS
SOIL TYPE	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'-6"	9'-0"	18-#8	4'-0"	11'-0"	18-#9	4'-6"	12'-0"	18-#10	5'-0"	11'-0"	23-#10
WET SAND	3'-6"	10'-0"	18-#8	4'0"	12'-0"	18-#9	4'-6"	13'-0"	18-#10	5'-0"	12'-0"	23-#10
CLAY (MEDIUM STIFF)	3'-6"	14'-0"	18-#8	4'-0"	15'-0"	18-#9	4'-6"	16'-0"	18-#10	5'-0"	17'-0"	23-#10
ALLUVIAL	3'-6"	11'-0"	18-#8	4'-0"	13'-0"	18-#9	4'-6"	15'-0"	18-#10	5'-0 "	14'-0"	23-#10

FS&T DWG. NO.

QA-013

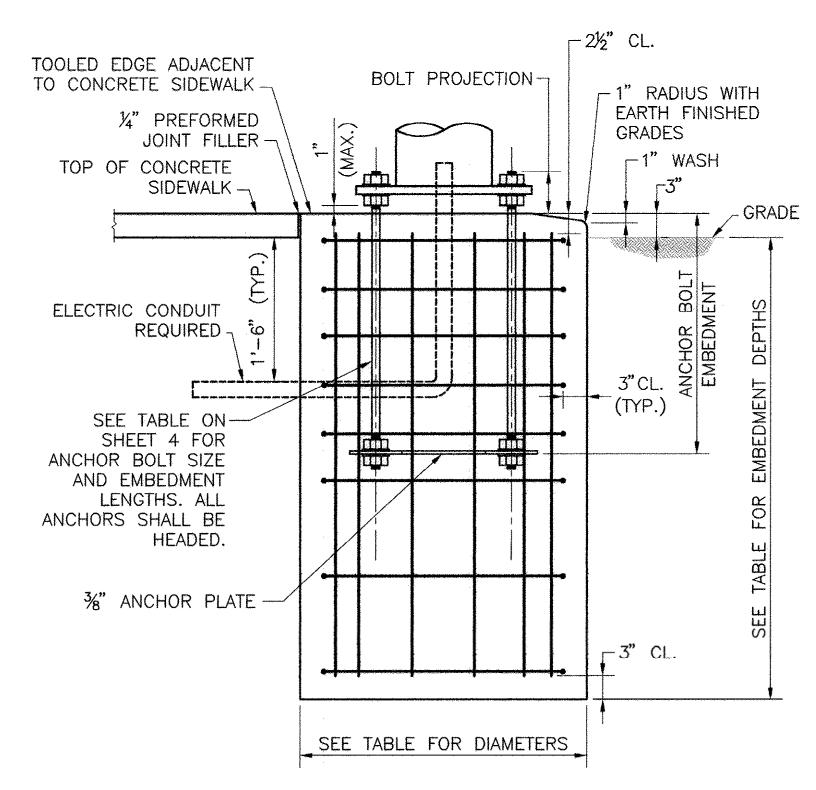
ENGINEER IN CHARGE

- 1. FOUNDATIONS SHALL BE 4000 PSI, 1½", 565 CEMENT CONCRETE.
- 2. REINFORCEMENT SHALL BE ASTM A615 GRADE 60.
- 3. ANCHOR BOLTS SHALL BE SET BY TEMPLATE.
- 4. PROVIDE FOR ELECTRICAL CONDUIT.
- 5. EXCAVATION SHALL BE BY THE AUGER METHOD TO THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATIONS WITHOUT DISTURBING THE SOIL AROUND AND BELOW THE PROPOSED FOUNDATION BOTTOM, ALTERNATE METHODS OF EXCAVATION MAY BE SUBMITTED TO MASSHIGHWAY FOR APPROVAL IF THEY MEET THE REQUIREMENTS LISTED IN NOTES 6, 7, AND 8,
- 6. THE EARTH WALLS OF THE FOUNDATION SHALL BE ADEQUATELY AND SECURELY PROTECTED AT ALL TIMES AGAINST CAVE-INS, DISPLACEMENT OF THE SURROUNDING EARTH AND FOR THE EXCLUSION OF GROUND WATER. THIS MAY BE DONE BY THE USE OF STEEL CYLINDER LINERS OR CASINGS THAT ARE APPROVED BY MASSHIGHWAY. IF LINERS ARE USED THEY MAY BE RECLAIMED PROVIDED THAT THEY ARE WITHDRAWN AS THE CONCRETE IS BEING PLACED, MAINTAINING A SUFFICIENT HEAD OF CONCRETE WITHIN THE LINER TO PREVENT REDUCTION IN THE FOUNDATION DIAMETER AND TO PREVENT EXTRANEOUS MATERIAL FROM FALLING IN FROM THE SIDES AND MIXING WITH THE CONCRETE.
- 7. IF THE SOIL IS DISTURBED OR REMOVED BEYOND THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATION, IT SHALL BE REPLACED WITH CONCRETE, ANY ADDITIONAL COST FOR THE CONCRETE SHALL BE PAID FOR BY THE CONTRACTOR.
- 8. SPECIAL CARE SHOULD BE GIVEN TO AREAS WHERE WET SOIL IS ENCOUNTERED, TO INSURE THAT THE PREAUGERED HOLE DOES NOT COLLAPSE. THIS MAY REQUIRE THE USE OF STEEL CYLINDER LINERS OR CASINGS TO HOLD THE SOIL IN PLACE UNTIL READY FOR CONCRETE PLACEMENT. THE STEEL CYLINDERS OR CASINGS SHALL BE WITHDRAWN AS THE FOUNDATION CONCRETE IS PLACED.
- 9. DETERMINATION OF EXISTING SOIL CONDITIONS SHALL BE MADE BY THE DESIGN ENGINEER.
- 10. IF LEDGE OR POOR SOIL IS ENCOUNTERED (i.e. ONE WHICH DOES NOT APPLY TO THE DESIGN TABLES SHOWN ON THIS SHEET), AN ALTERNATIVE DESIGN SHALL BE PROVIDED BY THE DESIGN ENGINEER. DECISIONS MADE IN NOTES 8 AND 9 SHALL BE SUBMITTED TO MASSHIGHWAY FOR APPROVAL. IF UTILITIES OR OTHER UNDERGROUND OBSTRUCTIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL BACKFILL THE AREA TO ITS ORIGINAL CONDITION UNTIL AN ALTERNATE DESIGN HAS BEEN PROVIDED BY THE ENGINEER.

ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3

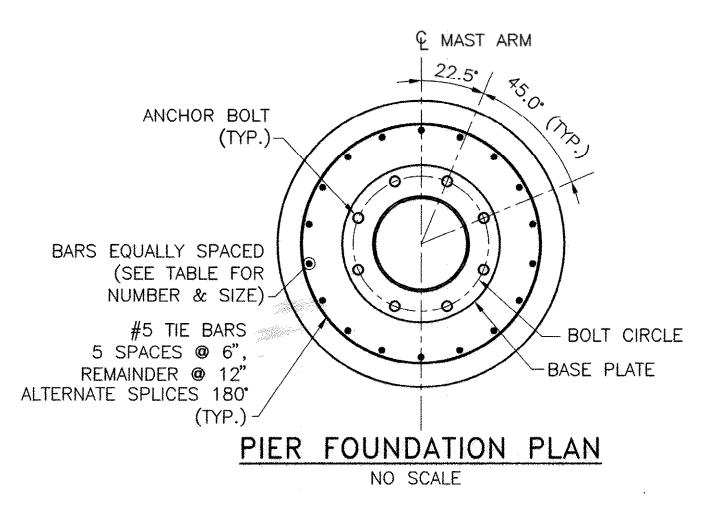
STATE FED. AID PROJ. NO. MASS. PROJECT FILE NO. 604687

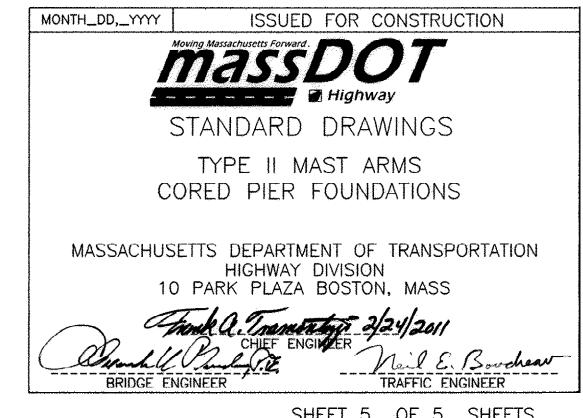
TRAFFIC SIGNAL DETAILS TYPE II MAST ARMS **FOUNDATIONS**



PIER FOUNDATION DETAIL

NO SCALE





SHEET 5 OF 5 SHEETS

ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3 STATE FED. AID PROJ. NO. SHEET TOTAL SHEETS

STATE FED. AID PROJ. NO. SHEETS

MASS. 99 177

PROJECT FILE NO. 604687

TEMPORARY TRAFFIC CONTROL PLAN PART 1 OF 4

GENERAL NOTES

- 1. CONTRACTOR WILL PERFORM WORK AFFECTING THE TRAVELING PUBLIC ONLY BETWEEN 9:00 AM AND 3:00 PM. ALL PAVEMENT EDGES SHALL BE SLOPED, WITH NO SHARP DROP OFFS.
- 2. NO WORK AFFECTING THE TRAVELING PUBLIC SHALL BE DONE BETWEEN THE DATES OF NOVEMBER 15 AND JANUARY 15. ALL LANES AND SIDEWALKS MUST BE OPEN TO TRAFFIC AND PEDESTRIANS DURING THIS TIME.
- 3. ACCESS TO ALL INTERSECTING STREETS AND BUSINESSES, DRIVEWAYS, AND WALKWAYS SHALL BE MAINTAINED AT ALL TIMES DURING ALL PHASES OF CONSTRUCTION, EXCEPT DURING SUCH LIMITED TIMES AS INDICATED IN NOTE 4 BELOW.
- 4. CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 48 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING ROADWAY, DRIVEWAY OR SIDEWALK EXCAVATION, TEMPORARY OR PERMANENT DRIVEWAY PAVEMENT PLACEMENT, WALKWAY RECONSTRUCTION AND SIMILAR OPERATIONS.
- 5. THE CONTRACTOR SHALL PROVIDE SAFE AND READY MEANS OF INGRESS AND EGRESS TO ALL STORES AND SHOPS, PUBLIC AND PRIVATE AND PROFESSIONAL OFFICES AND ANY OTHER BUSINESSES OR RESIDENCES IN THE PROJECT AREA, BOTH DAY AND NIGHT, FOR THE DURATION OF THE PROJECT.

PHASE I - SIDEWALK RECONSTRUCTION, CURBING, AND DRAINAGE:

- 1. CONSTRUCT SIDEWALK, RESET/INSTALL CURBING, AND INSTALL DRAINAGE STRUCTURES WITHIN WORKZONE.
- 2. WHERE THE WORK IS OCCURRING, CURBSIDE PARKING MUST BE MAINTAINED ON AT LEAST ONE SIDE OF ROADWAY AT ALL TIMES. NO CURB OR DRAINAGE WORK MAY BE PERFORMED SIMULTANEOUSLY ON DIRECTLY OPPOSITE SIDES OF THE ROADWAY.
- 3. SEE TRAFFIC MANAGEMENT DETAILS, SHEET NOS. 100 AND 101.

PHASE II - MEDIAN CONSTRUCTION:

- 1. CONSTRUCT MEDIANS (INSTALL CURBING OR EDGING AS REQUIRED) WITHIN WORKZONE.
- 2. SEE DETAIL FOR INTERIOR LANE CLOSURE, SHEET NO. 100.

PHASE III - MILLING AND PAVING:

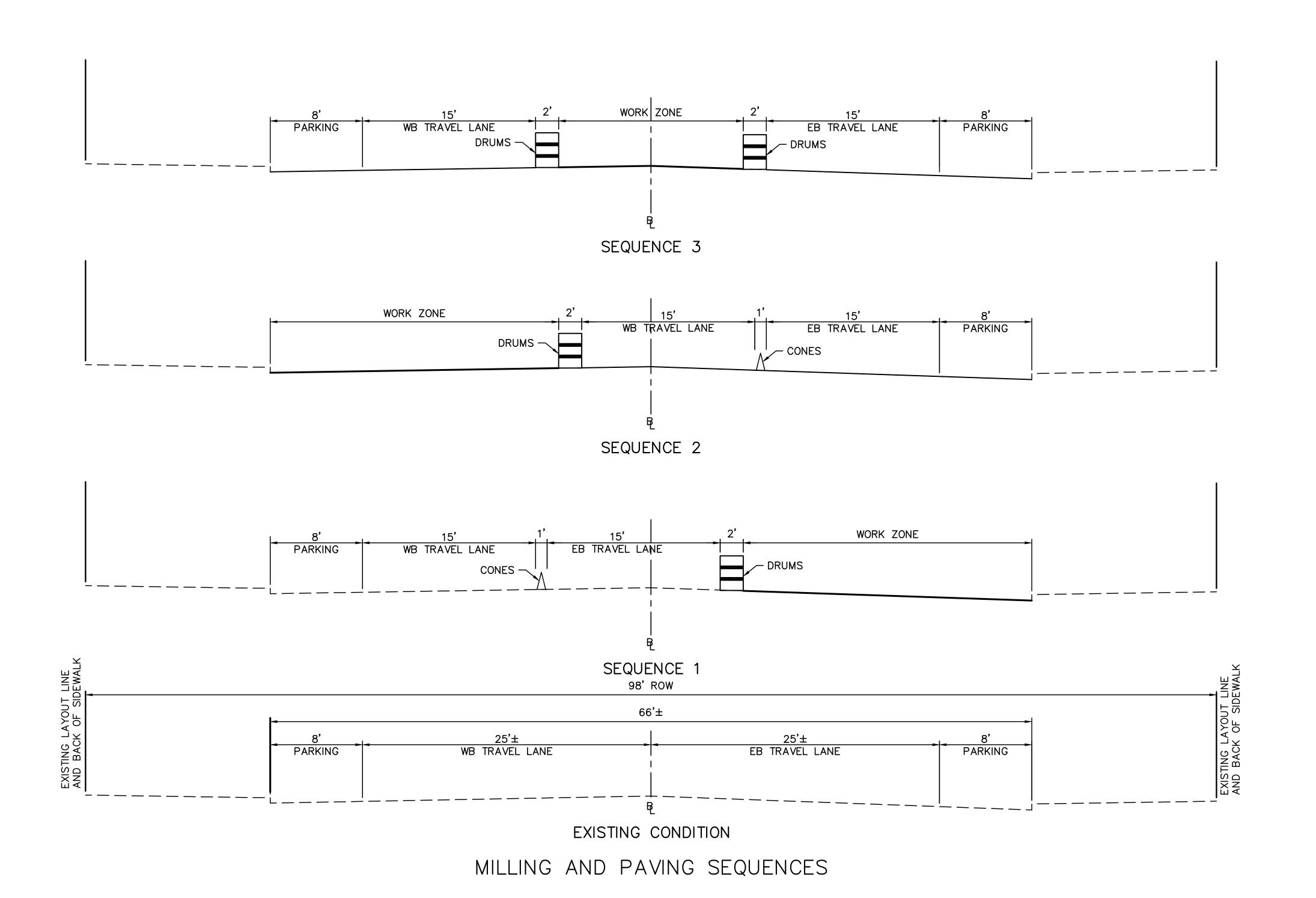
- * (MILLING AND PAVING SHALL NOT BE DONE UNTIL SIDEWALK AND MEDIAN WORK IS COMPLETE.)
- 1. MILL AND OVERLAY PAVEMENT WITHIN WORKZONES AS SHOWN ON THIS SHEET AND AS REQUIRED BY THE ENGINEER.
- 2. MILLING AND PAVING OPERATIONS SHALL FOLLOW SEQUENCES 1, 2, AND 3 SHOWN ON THIS SHEET, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- 3. MILLING AND PAVING SHALL TAKE PLACE OUTSIDE MORNING OR EVENING PEAK TRAVEL HOURS (9:00 AM 3:00 PM) AS APPROVED BY THE ENGINEER.
- 4. NO SUBPHASE OR SECTION OF ROADWAY MILLING AND PAVING SHALL TERMINATE WITHIN AN INTERSECTION.

PHASE IV — PAVEMENT MARKINGS:

1. APPLY PERMANENT PAVEMENT MARKINGS THROUGHOUT THE PROJECT.

PHASE V - FINAL LANDSCAPING AND CLEAN-UP:

- 1. INSTALL FINAL LANDSCAPING, REPAIR AND REPLACE LANDSCAPING THAT HAS BEEN DAMAGED OR HAS NOT ESTABLISHED PROPERLY.
- 2. RE-SEED ANY LAWN AREAS AS DIRECTED BY THE ENGINEER.
- 3. CLEANUP OF PROJECT SITE.



 FS&T DWG. NO.

 QA-013

 DES
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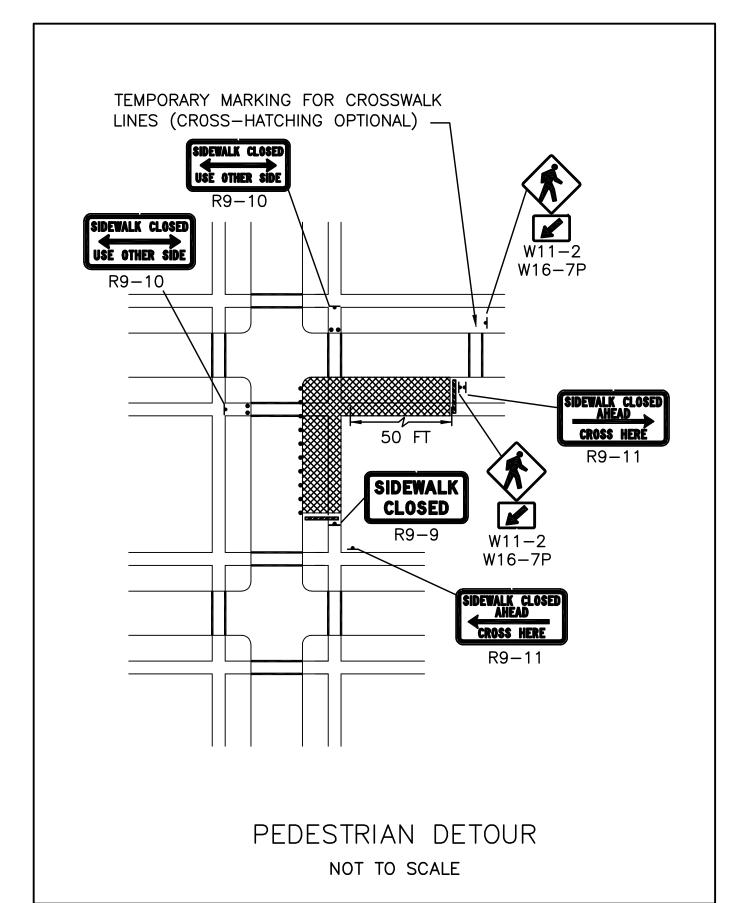
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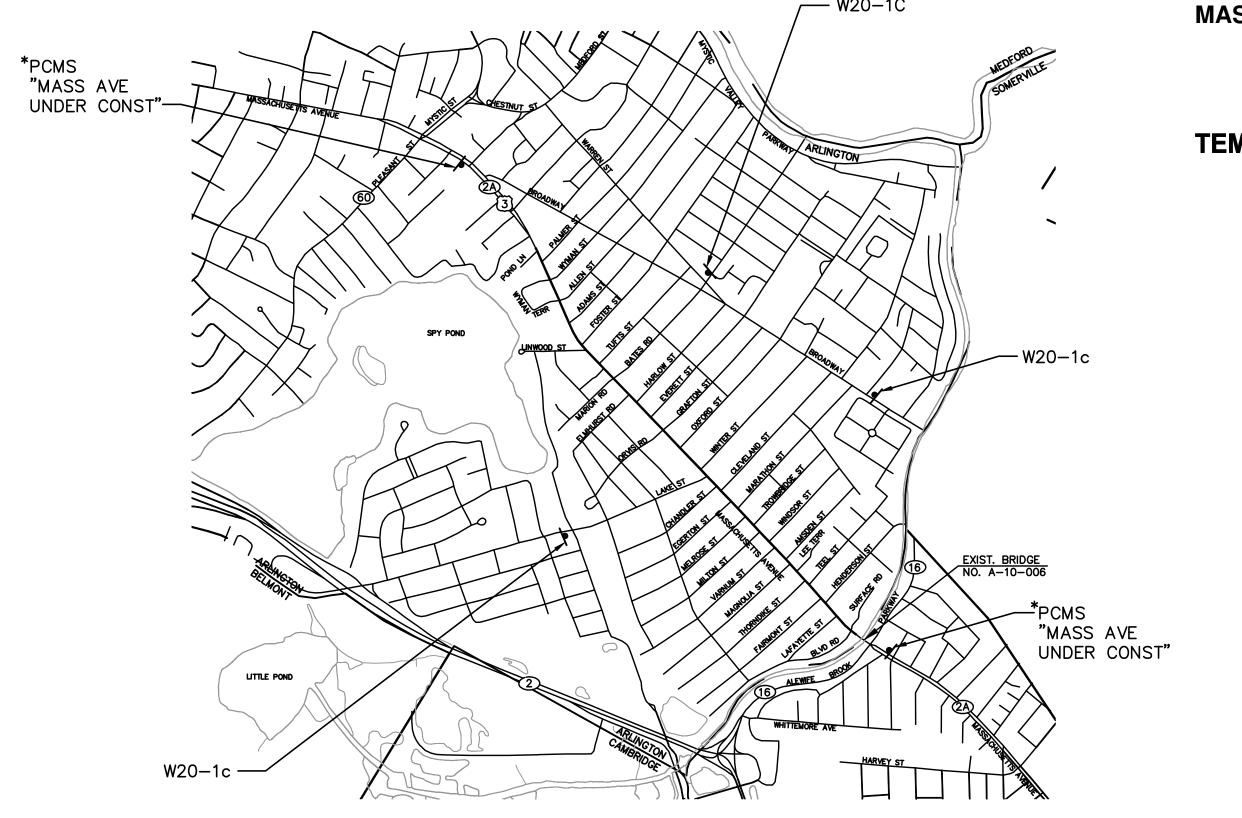
ENGINEER IN CHARGE

SCALE IN FEET
0 5 12.5 25

NOTES:

- 1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS.
- 2. ALL SIGN LEGENDS, BORDERS AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
- 3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
- 4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
- 5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, AND REFLECTORIZED PLASTIC DRUMS WITH MOUNTED LIGHTING DEVICES, MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES."
- 6. THE FIRST THREE PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.
- 7. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
- 8. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
- 9. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
- 10. MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN.
 MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR
 MEDIAN BARRIER.
- 11. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
- 12. CONTRACTOR SHALL MAINTAIN ACCESS TO BUSINESSES/RESIDENTS AT ALL TIMES DURING CONSTRUCTION





ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3

STATE FED. AID PROJ. NO. SHEET NO. SHEETS

MASS. 100 177

PROJECT FILE NO. 604687

TEMPORARY TRAFFIC CONTROL PLAN PART 2 OF 4

<u>LEGEND</u>

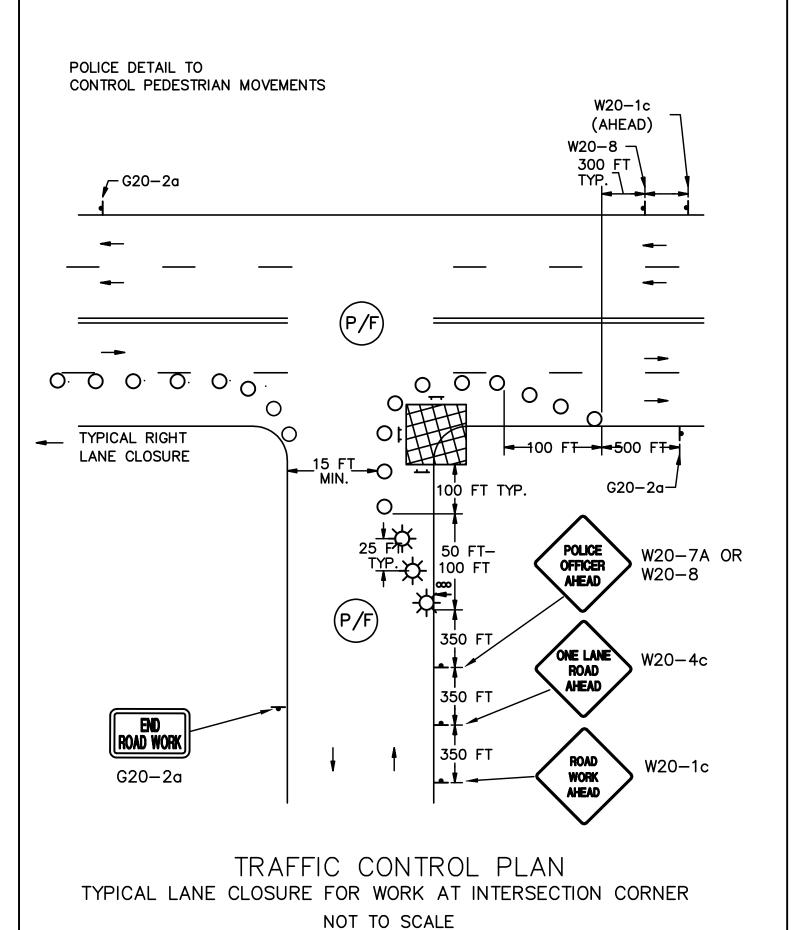
- REFLECTORIZED DRUM
- REFLECTORIZED DRUM WITH TYPE A (FLASHING) LIGHT
- CONSTRUCTION SIGN
- TYPE III BARRICADE
- WORK ZONE
- (P/F) POLICE OFFICER/FLAGGER
- → DIRECTION OF TRAFFIC
- TEMPORARY CONCRETE BARRIER

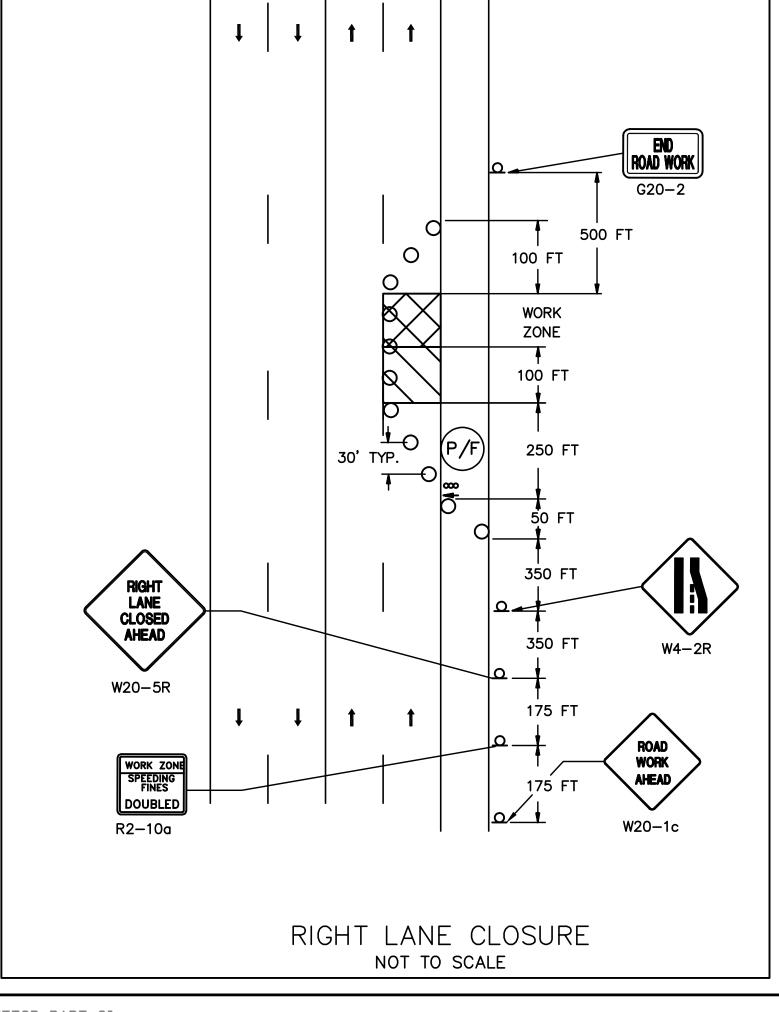
ADVANCE WARNING SIGNS

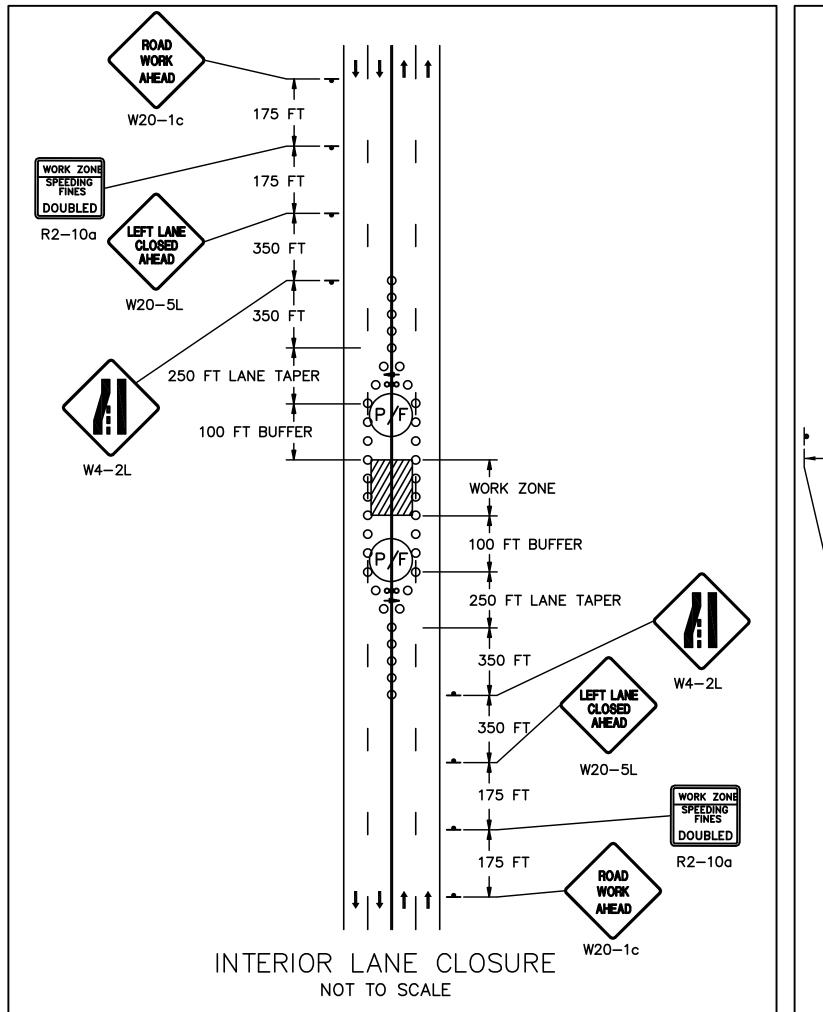
NOT TO SCALE NO

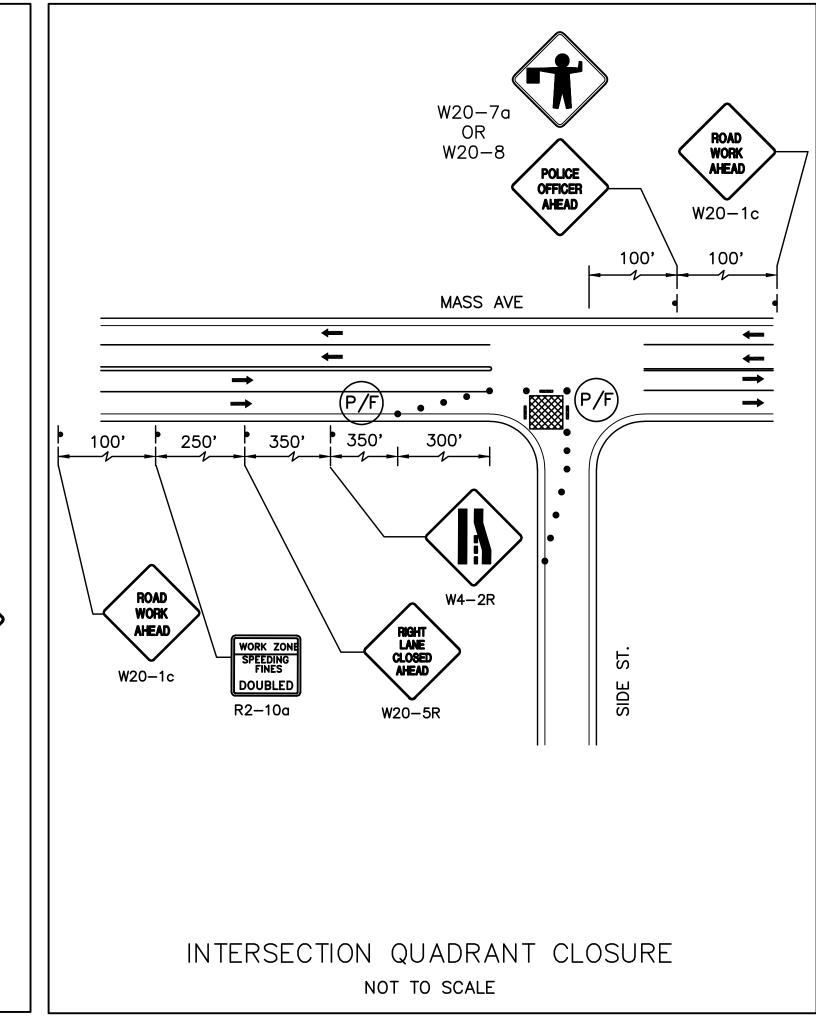
NOTES:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL PROPOSED PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) IN THE FIELD SUCH THAT VEHICULAR ABD PEDESTRIAN TRAFFIC IS NOT IMPEDED. LOCATION OF PCMS UNITS ON PRIVATE PROPERTY SHALL NOT BE PERMITTED WITHOUT PRIOR APPROVAL FROM THE OWNER.

* PCMS UNITS SHALL BE INSTALLED 2 WEEKS PRIOR TO THE BEGGINING OF CONSTRUCTION AND SHALL READ "MASS AVE WORK BEGINS X/X/X. PCMS UNITS SHALL BE REPLACED WITH W20-1c SIGNS AFTER 30 DAYS.









 FS&T DWG. NO.

 QA-013

 DES
 AED
 CHK
 JMM

 DR
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ENGINEER IN CHARGE

[Michal_J] - April 24, 2013 - 3:23pm - T:\QA-013 Mass Ave_Arlington\Drawings\QA-013_Traffic_TTCP_Details.dwg [TTCP PART 2]

NOTES:

- 1. CONTRACTOR SHALL LIMIT FULL DEPTH SIDEWALK CONSTRUCTION, OR ANY WORK THAT INVOLVES EXCAVATION WITHIN OR ADJACENT TO SIDEWALKS, TO ONE STREET BLOCK ON EACH SIDE OF THE STREET.
- 2. CONTRACTOR SHALL ONLY OCCUPY THE CURBSIDE PARKING LANE ON ONE SIDE OF THE STREET IN THE BLOCK WHERE WORK IS OCCURING.
- 3. NO SIDEWALK OR UTILITY WORK SHALL BE PERFORMED ON BOTH SIDES OF THE STREET SIMULTANEOUSLY WITHIN THE BLOCK WHERE WORK IS OCCURING.
- 4. CONSTRUCTION FENCING SHALL BE INSTALLED TO PROTECT PEDESTRIANS WHEN THE TEMPORARY PEDESTRIAN PATH IS TO BE LOCATED WITHIN THE ROADWAY.
- 5. DRUMS AND POLICE OFFICER(S) SHALL BE USED TO GUIDE PEDESTRIANS TO A TEMPORARY PEDESTRIAN PATH WITHIN THE ROADWAY AS SHOWN. SIDEWALK USE WILL BE RESTORED BEFORE WORK IS COMPLETED FOR THE

ARLINGTON

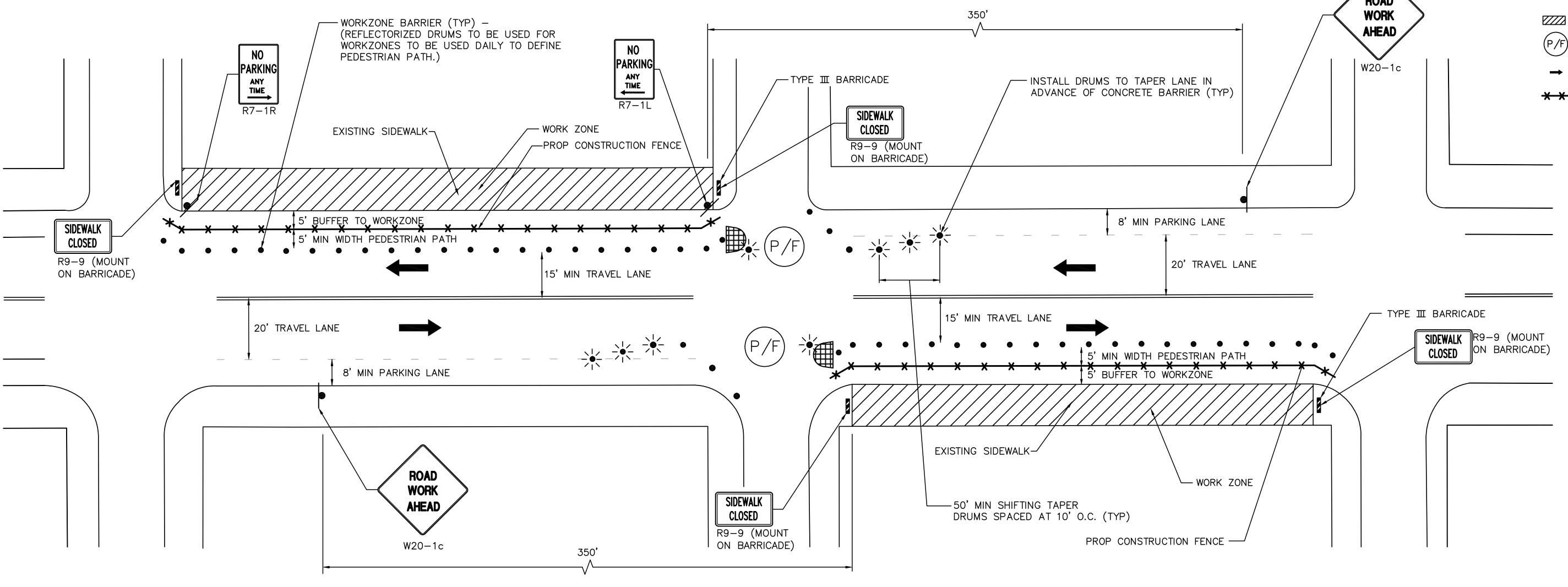
MASSACHUSETTS AVENUE - ROUTE 2A/3

SHEET TOTAL NO. SHEETS STATE FED. AID PROJ. NO. 101 177 PROJECT FILE NO. 604687

TEMPORARY TRAFFIC CONTROL PLAN **PART 3 OF 4**

<u>LEGEND</u>

- REFLECTORIZED DRUM
- REFLECTORIZED DRUM WITH TYPE A (FLASHING) LIGHT
- CONSTRUCTION SIGN
- TYPE III BARRICADE
- WORK ZONE
- (P/F) POLICE OFFICER/FLAGGER
- → DIRECTION OF TRAFFIC
- TEMPORARY CONSTRUCTION FENCE



PEDESTRIAN BYPASS SCALE: 1" = 20'

FS&T DWG. NO. QA-013

[Michal_J] - April 24, 2013 - 3:23pm - T:\QA-013 Mass Ave_Arlington\Drawings\QA-013_Traffic_TTCP_Details.dwg [TTCP PART 3]

STATE FED. AID PROJ. NO. SHEET TOTAL NO. SHEETS 102 177

PROJECT FILE NO. 604687

CONSTRUCTION SIGN SUMMARY

NOTE:
SUPER HIGH INTENSITY UNMETALIZED MICROPRISMATIC ELEMENT
REFLECTIVE SHEETING M9.30.0 TYPE VII, VIII, IX, OR X
SHALL BE USED FOR ALL SIGNS.

TEMPORARY TRAFFIC CONTROL PLAN PART 4 OF 4

IDENTIFI-	SIZE C	F SIGN	TEXT	TEX	T DIMENSIO	NS	NUMBER OF		COLOR		POST SIZE AND	AREA IN
CATION NUMBER	WIDTH	HEIGHT	1271	LETTER HEIGHT	VERTICAL SPACING	ARROW	SIGNS REQUIRED	BACK- GROUND	LEGEND	BORDER	NUMBER REQUIRED	SQUARE FEET
G20-2	36"	18"	END ROAD WORK	SEE MAS	 SSDOT STA 	NDARDS	13	SEE MAS	 SSDOT STA 	 NDARDS 		58.50
R2-10a	48"	36"	WORK ZONE SPEEDING FINES DOUBLED	V	•	V	4	•	•	•		48.00
R7–1R	12"	18"	NO / NO PARKING	055 141	1700 0741	D 4 D D C	4	055 141				6.00
R7–1L	12"	18"	ANY TIME ANY TIME	SEE MU	JTCD STAN 	DAKD2	4	SEE MU	JTCD STAN 	DARDS 		6.00
R9-9	30"	18"	SIDEWALK CLOSED	SEE MAS	SSDOT STA	NDARDS	8	SEE MAS	SSDOT STA	NDARDS		30.00
R9-10	48"	24"	SIDEWALK CLOSED USE OTHER SIDE				8					64.00
R9-11R	48"	24"	SIDEWALK CLOSED / SIDEWALK CLOSED AHEAD AHEAD				4					32.00
R9-11L	48"	24"	CROSS HERE CROSS HERE				4					32.00
W4-2L	36"	36"					2					18.00
W4-2R	36"	36"					2					18.00
W11-2	30"	30"					8					50.00
W16-7P	24"	12"					8					16.00
W20-1c	36"	36"	ROAD WORK AHEAD				13					117.00
W20-4c	36"	36"	ONE LANE ROAD AHEAD				4					36.00
V20-5cR	36"	36"	RIGHT LANE CLOSED LEFT LANE CLOSED				2					18.00
V20-5cL	36"	36"	CLOSED CLOSED AHEAD				2					18.00
W20-7a	36"	36"					4					36.00
W20-8	36"	36"	POLICE OFFICER AHEAD				4	•		•		36.00

IDENTIFI-	SIZE O	F SIGN	TEVT	TEX	T DIMENSIO		NUMBER OF		COLOR		POST SIZE AND	AREA IN SQUARE
CATION NUMBER	WIDTH	HEIGHT	TEXT	LETTER HEIGHT	VERTICAL SPACING	ARROW	SIGNS REQUIRED	BACK- GROUND	LEGEND	BORDER	POST SIZE AND NUMBER REQUIRED	SQUARE FEET

FS&T DWG. NO. QA-013

[Michal_J] - April 24, 2013 - 3:23pm - T:\QA-013 Mass Ave_Arlington\Drawings\QA-013_Traffic_Sign_Summary.dwg [Con Sign Sum]

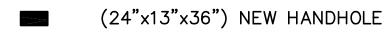
LIGHTING LEGEND



11 FOOT POLE MOUNTED ACORN LUMINAIRE

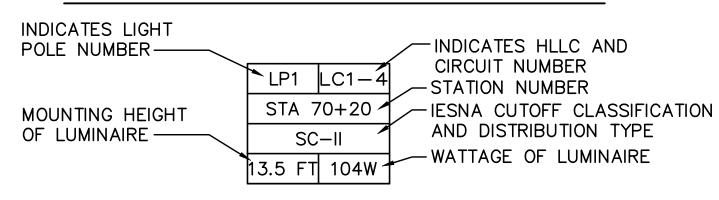


HIGHWAY LIGHTING LOAD CENTER



UNDERGROUND CONDUIT AND WIRING TO BE INSTALLED AS INDICATED ON THE DETAILS

LUMINAIRE INFORMATION BOX



ABBREVIATIONS

AMPERE

(ABAN) ABANDON AMERICAN WIRE GAUGE

CONDUIT DIA DIAMETER ELEC. ELECTRIC **EMH** ELECTRIC MANHOLE FULL CUTOFF

G GROUND **GFCI** GROUND FAULT CIRCUIT INTERRUPTER HIGHWAY LIGHTING LOAD CENTER

HLLC LIGHTING CIRCUIT

FOOT

LP LIGHT POLE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

MINIMUM

FT

ORANGE

OD OUTER DIAMETER 0.C. ON CENTER

POLE POLYVINYL CHLORIDE PVC

RM RIGID METAL RGS RIGID GALVANIZED STEEL R&D REMOVE AND DISPOSE

SEMI-CUTOFF DISTRIBUTION SCH SCHEDULE

SPDT SINGLE POLE DOUBLE THROW TYP. TYPICAL UNDERWRITERS LABORATORIES

WATT / WHITE WITH

- CONDUIT RUNS ARE SHOWN APPROXIMATE. LOCATIONS MAY BE 16. ADJUSTED TO MATCH EXISTING AND PROPOSED CONDITIONS AS REQUIRED BY THE RESIDENT ENGINEER.
- THE CONTRACTOR SHALL VISIT THE JOB SITE WITH THE CONTRACT DOCUMENTS AND INVESTIGATE ALL CONDITIONS AFFECTING THIS WORK. THE CONTRACTOR SHALL BE FAMILIAR WITH THE LOCATION AND SITE OF THE WORK, AND SHALL VERIFY DIMENSIONS, QUANTITIES, ACTUAL INSTALLATION CONDITIONS, CONFLICTS, AND STORAGE FACILITIES.
- STATIONING FOR POLES IS GIVEN FROM THE BASELINE CLOSEST TO THE POLE. OFFSET DISTANCE FROM STREET IS DEFINED ON LIGHT POLE FOUNDATION DETAIL.
- ALL WIRING IN THE PANELBOARDS AND CABINETS SHALL BE PERMANENTLY LABELED AND NEATLY INSTALLED.
- 5. ALL CONDUIT AND EQUIPMENT TO BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE, MASSACHUSETTS ELECTRICAL CODE AND APPLICABLE LOCAL CODES.
- 6. ALL EQUIPMENT AND MATERIALS SHALL BE UL LISTED FOR ITS INTENDED PURPOSE.
- WIRE SIZES SHALL BE BASED ON AMERICAN WIRE GAGE (AWG), AS APPLIED TO COPPER CONDUCTORS. THE CONDUCTOR INSULATION SHALL BE TYPE USE-2 OR RHH-RHW-2.
- WIRE AND CABLE FURNISHED AND USED SHALL BE NEW. WIRE AND CABLE SHALL BE PROTECTED FROM WEATHER AND DAMAGE DURING STORAGE AND HANDLING.
- NO WIRE SHALL BE DRAWN IN TO ANY CONDUIT UNTIL ALL WORK WHICH MAY CAUSE CABLE DAMAGE IS COMPLETE.
- 10. THE CONTRACTOR SHALL CAREFULLY MARK THE PROPOSED LOCATION OF THE CONCRETE FOUNDATION AND THEN SHALL DETERMINE IF ANY UTILITIES, OR UNDERGROUND OR OVERHEAD OBSTRUCTION WILL PREVENT THE INSTALLATION AT THIS LOCATION. SIMILAR MARKING SHALL BE DONE FOR THE CONDUIT RUNS TO THE FOUNDATION. IF SUCH AN OBSTRUCTION IS EVIDENT, THE CONTRACTOR SHALL REQUEST PERMISSION FROM THE ENGINEER TO MOVE OR ADJUST THE LOCATION OF THE FOUNDATION.
- 11. THE CONTRACTOR SHALL PERFORM THE WORK IN A MANNER ACCEPTABLE TO THE ENGINEER SO THAT INTERFERENCE WITH OR INCONVENIENCE TO BUSINESS CONCERNS OR ABUTTERS ON ACCOUNT OF THE CONSTRUCTION WORK IS KEPT TO A MINIMUM. THE CONTRACTOR SHALL MAINTAIN SAFE AND REASONABLE ACCESS TO AND EGRESS FROM ABUTTING PROPERTIES AT ALL TIMES.
- 12. THE CONTRACTOR SHALL BE REQUIRED TO ADHERE TO ALL REGULATIONS IMPOSED BY THE TOWN OF ARLINGTON.
- 13. ELECTRICAL SERVICE TO EACH HIGHWAY LIGHTING LOAD CENTER (HLLC) WILL BE PROVIDED BY NSTAR. CONTRACTOR SHALL PROVIDE CONDUIT AND WIRE UP POLE WITH ENOUGH SLACK FOR SERVICE CONNECTION. CONTRACTOR SHALL COORDINATE WITH NSTAR FOR SERVICE CONNECTION. CONTRACTOR IS RESPONSIBLE FOR ALL ELECTRIC SERVICE CONNECTIONS AND RELATED FEES FROM NSTAR.
- 14. INSTALL PHOTO ELECTRIC SWITCH IN HLLC.
- 15. CONDUIT SHALL BE SCH. 40 WITH METALLIC DETECTABLE CAUTION TAPE ABOVE. UNLESS OTHERWISE NOTED, CONDUIT SHALL BE AS FOLLOWS:
 - 3" PVC CONDUIT FROM LIGHTING LOAD CENTER TO NSTAR SERVICE CONNECTION.
 - 2" PVC CONDUIT BETWEEN HANDHOLES
 - 2" PVC CONDUIT BETWEEN HANDHOLE AND LIGHT POLE
 - 2" RGS CONDUIT TRANSITION INTO POLE FOUNDATION

GENERAL NOTES:

- ALL WIRE SHALL BE CONTINUOUS FROM POLE TO POLE WITHOUT RUNNING SPLICES IN CONDUITS. ALL WIRES SHALL EXTEND 24" OUT OF THE POLE PULL BOX, CONNECTED AT ENDS AND ROLLED BACK INTO THE PULL BOX.
- 17. SPLICES SHALL BE IN ACCORDANCE WITH SECTION 813 OF THE MASSHIGHWAY STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
- THE HOT LINE AND NEUTRAL CONNECTION IN THE POLE HANDHOLE SHALL BE WITH AN APPROVED STREET LIGHT FUSE CONNECTOR.
- THE LOCATIONS OF EXISTING SUBSURFACE UTILITIES SHOWN ON THE PLANS WERE COMPILED FROM AVAILABLE RECORD DRAWINGS AND ARE NOT WARRANTED TO BE CORRECT. THE LOCATIONS ARE APPROXIMATE ONLY AND IN SOME CASES MAY BE INCOMPLETE. THE CONTRACTOR SHALL NOTIFY ALL AGENCIES REQUIRED AND VERIFY THE LOCATION OF ALL EXISTING SUBSURFACE UTILITIES PRIOR TO PERFORMING ANY
- THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING FEATURES PRIOR TO PERFORMING ANY WORK.
- WHERE A NEW PAVEMENT SHALL MEET EXISTING PAVEMENT, THE JOINT SHALL BE SAWCUT TO A NEAT VERTICAL LINE.
- 22. THE CONTRACTOR SHALL MAINTAIN AREAS IN AND AROUND THE WORK ZONE FREE AND CLEAR OF DEBRIS AT ALL TIMES. NO STOCKPILING OF EQUIPMENT OR MATERIAL SHALL BE PERMITTED OUTSIDE OF FIXED WORK ZONES.
- 23. THE CONTRACTOR SHALL INSTALL OTHER NECESSARY TEMPORARY REGULATORY AND WARNING SIGNS DURING CONSTRUCTION AS REQUIRED BY THE ENGINEER FOR OTHER INCIDENTAL CONSTRUCTION ACTIVITIES. ALL SIGNAGE AND TRAFFIC CONTROL DEVICES USED MUST CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", 2003 EDITION AND THE LATEST ADDENDUMS.

ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3

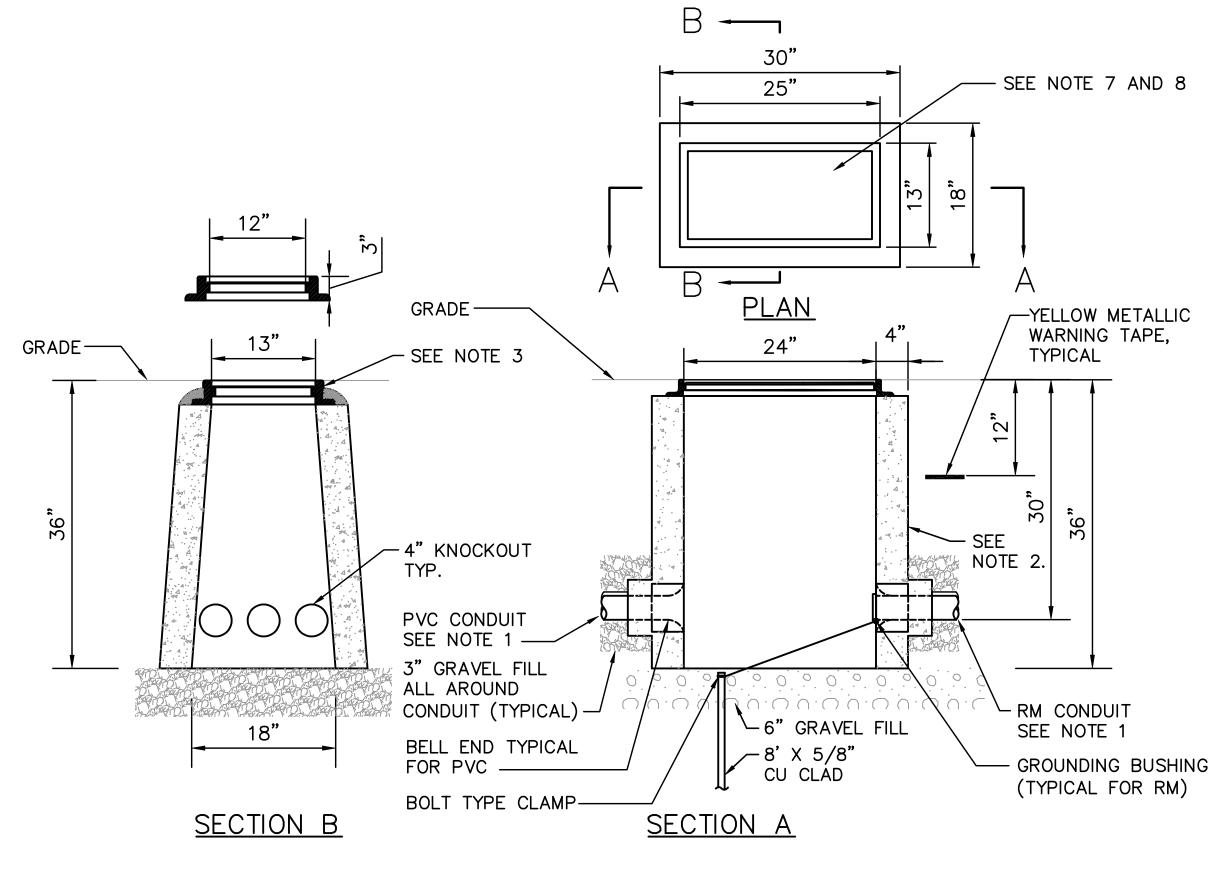
FED. AID PROJ. NO. STATE NO. MASS. 103 177 PROJECT FILE NO. 604687

LIGHTING LEGEND, GENERAL NOTES AND ABBREVIATIONS

ELECTRIC HANDHOLE GENERAL NOTES:

- 1. ALL CONDUIT ENTERING HANDHOLES SHALL EXTEND INTO THE HANDHOLE CAVITY BY AT LEAST 2".
- 2. ALL HANDHOLES SHALL BE PRECAST CONCRETE, AND SHALL BE FREE OF CRACKS OR OTHER DEFECTS. CONCRETE FOR PRECAST CONCRETE PULLBOXES/HANDHOLES SHALL BE 4000 PSI, 3/4", 610 CEMENT CONCRETE MASONRY.
- 3. POLYMER CONCRETE FRAME SHALL BE BOLTED TO THE SURFACE OF THE PRECAST CONCRETE HANDHOLE.
- 4. ALL CONDUIT INSTALLED IN HANDHOLES SHALL BE INSTALLED IN KNOCKOUTS PROVIDED IN THE BOX AND NO EXCESS KNOCKOUTS SHALL BE MADE. THE KNOCKOUTS ARE DESIGNED TO BE MADE PRIOR TO BACKFILLING AROUND THE PULLBOXES AND HANDHOLES. AFTER THE CONDUIT HAS BEEN INSTALLED IN THE PULLBOX/HANDHOLE, THE OPEN SPACE BETWEEN THE BOX AND THE CONDUIT WILL BE SEALED WITH 4000 PSI CEMENT CONCRETE MASONRY. ANY CONDUIT INSTALLED IN SUCH A MANNER AS TO BLOCK COMPLETE ACCESS TO ANY OTHER CONDUIT SHALL BE REMOVED AND RESET.
- 5. FOR THE EXACT NUMBER, SIZE, AND ORIENTATION OF THE CONDUITS ENTERING THE HANDHOLE, SEE LIGHTING PLAN SHEETS.
- HANDHOLE FRAME AND COVER TO BE NON-CONDUCTIVE FIBERGLASS REINFORCED POLYMER CONCRETE TYPE. FRAME AND COVER TO BE RATED FOR A STATIC DESIGN LOAD OF 15,000 LB OVER A 10"X10" AREA AND MUST PASS A MINIMUM STATIC TEST LOAD OF 22,568 LB. MINIMUM. FRAME AND COVER SHALL BE RATED ANSI TIER 15 MINIMUM.
- 7. FUNCTION DESIGNATION ON THE HANDHOLE SHALL BE LABELED AS FOLLOWS PER NEC ARTICLE 314.30D:

"LIGHTING" FOR LIGHTING CONDUIT

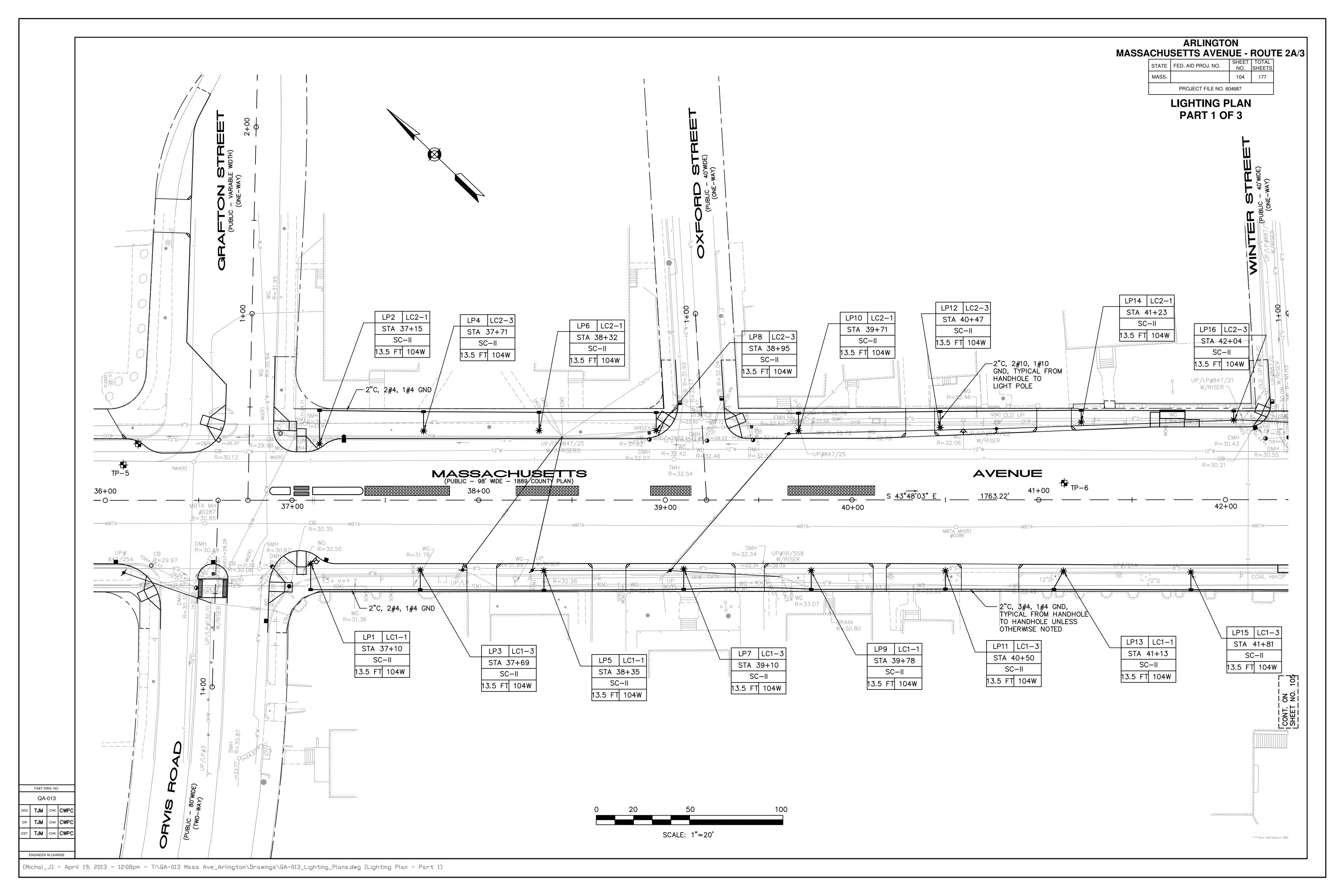


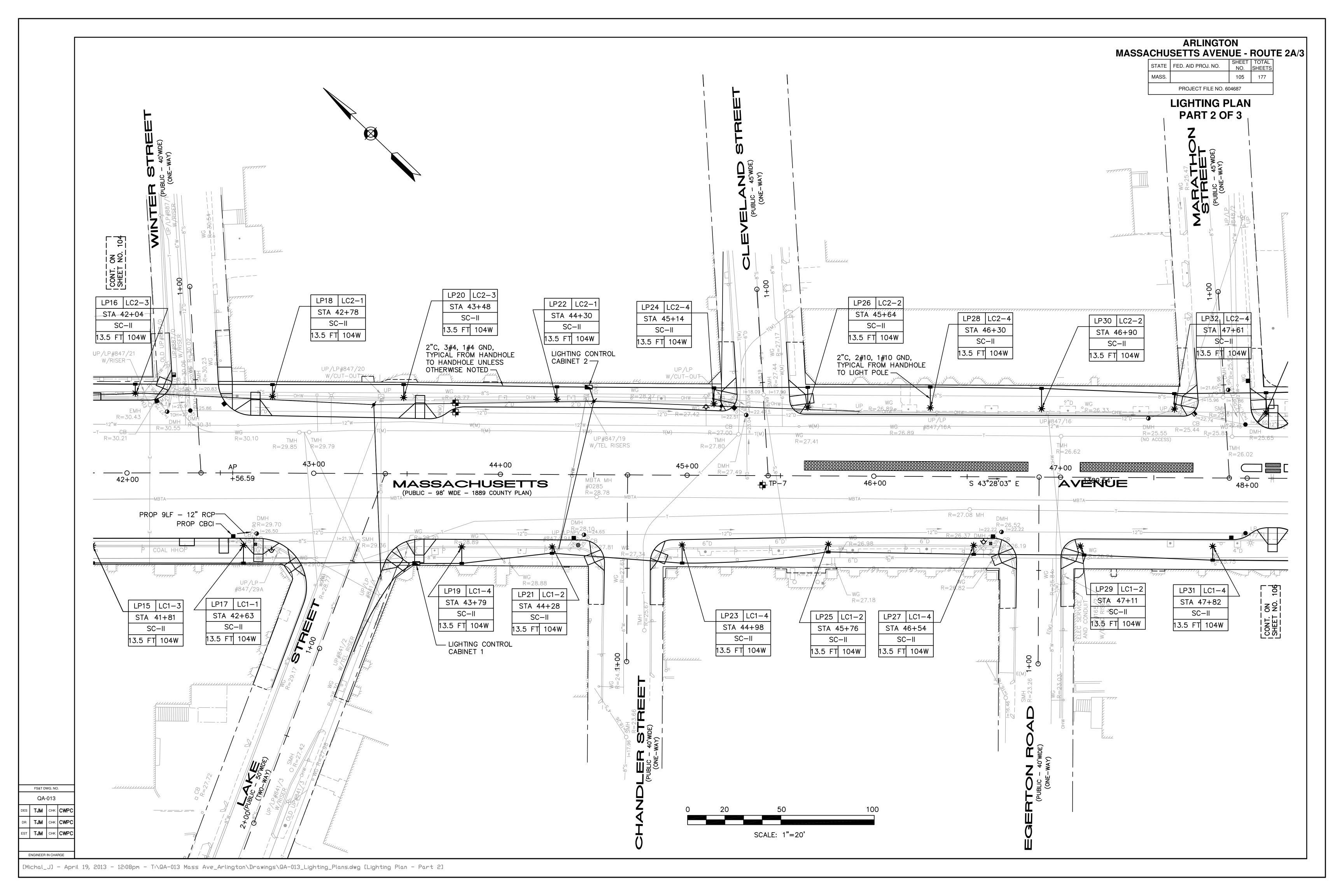
<u>HANDHOLE - 24" x 13" x 36"</u> NOT TO SCALE

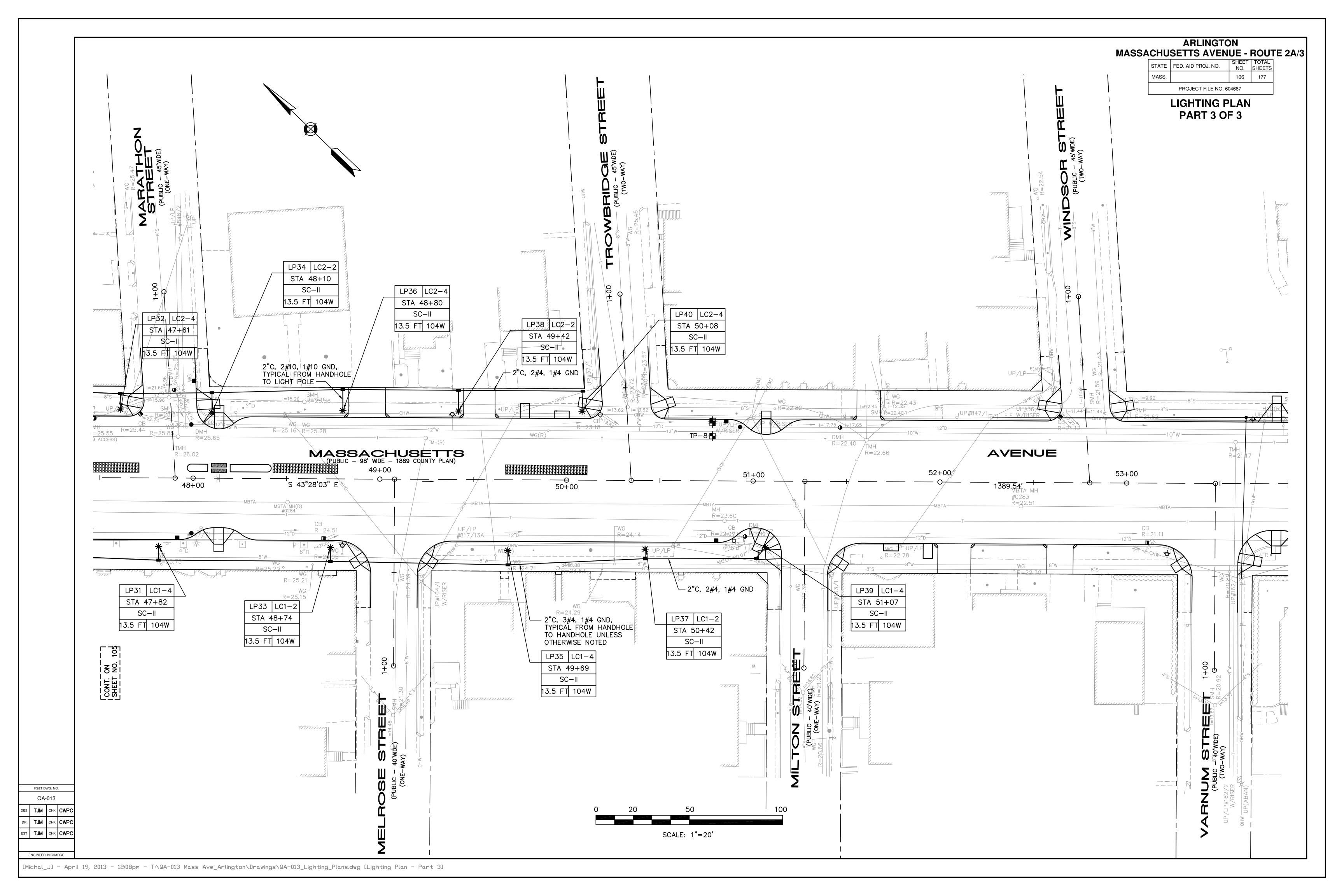
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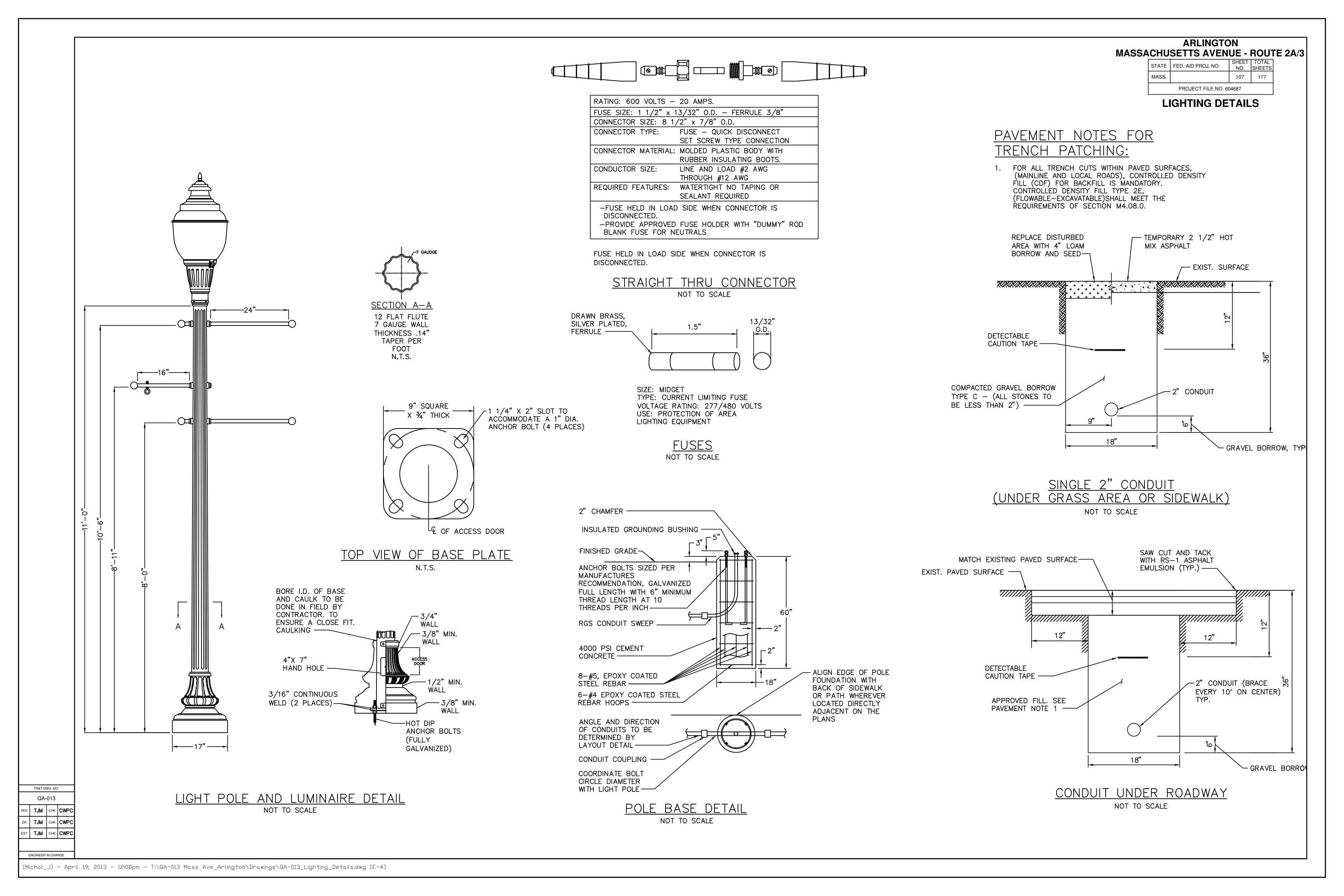
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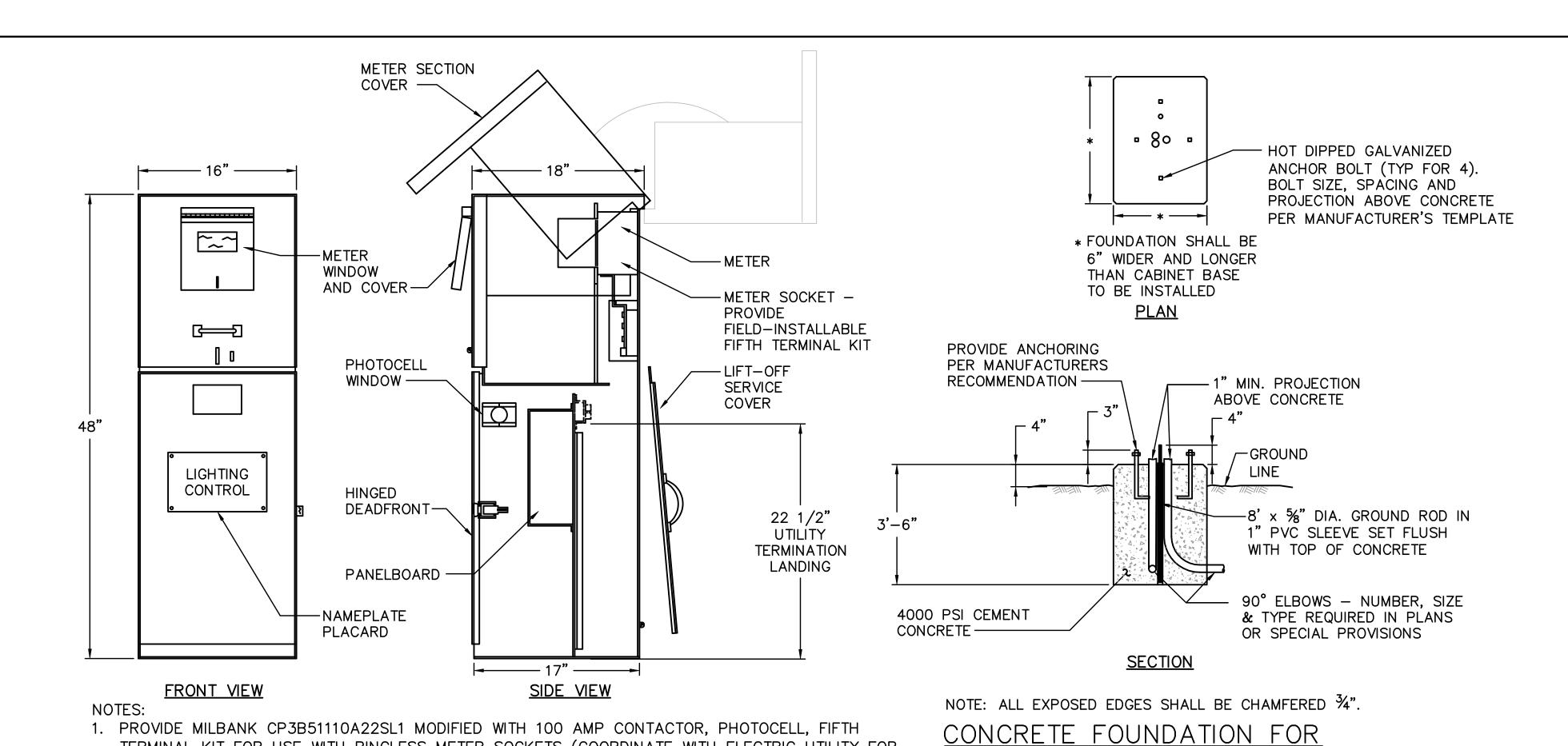
ENGINEER IN CHARGE [Michal_J] - April 19, 2013 - 12:08pm - T:\QA-013 Mass Ave_Arlington\Drawings\QA-013_Lighting_Legend.dwg [E-1]











TERMINAL KIT FOR USE WITH RINGLESS METER SOCKETS (COORDINATE WITH ELECTRIC UTILITY FOR METER SOCKET REQUIREMENTS), MOUNTING BASE, ANCHOR BOLT KIT, GFCI RECEPTACLE, AND INTERNAL LIGHT FIXTURE OR EQUIVALENT BY MYERS POWER PRODUCTS, OR VIT STRONG BOX.

LIGHTING CONTROL CABINET DETAIL

NOT TO SCALE

PANELBOARD LC1 SWITCHED LOADS ONLY SHORT CIRCUIT BRACING: 10-KAIC BUS: 120/240V, 1PH, 3W, 60HZ CABINET: SURFACE MAIN LUGS ONLY: 100A PANEL LOCATION: MASSACHUSETTS AVENUE GROUND BAR FEEDER SIZE: 3#2, 1#2-GND VA VA CKT. CKT. VA VA NEUTRAL HP LOAD SERVED LOAD SERVED B NO. LP1, LP5, LP9, LP13, LP17 520 2 520 LP21, LP25, LP29, LP33, LP37 624 LP3, LP7, LP11, LP15 416 3 LP19, LP23, LP27, LP31, LP35, LP39 13 15 ALL BRANCH C/B: 20 AMP TRIP VA A: 1040 VA B: 1040 TOTAL CONNECTED LOAD: 4960 UNLESS OTHERWISE NOTED

LIGHTING CONTROL CABINET

NOT TO SCALE

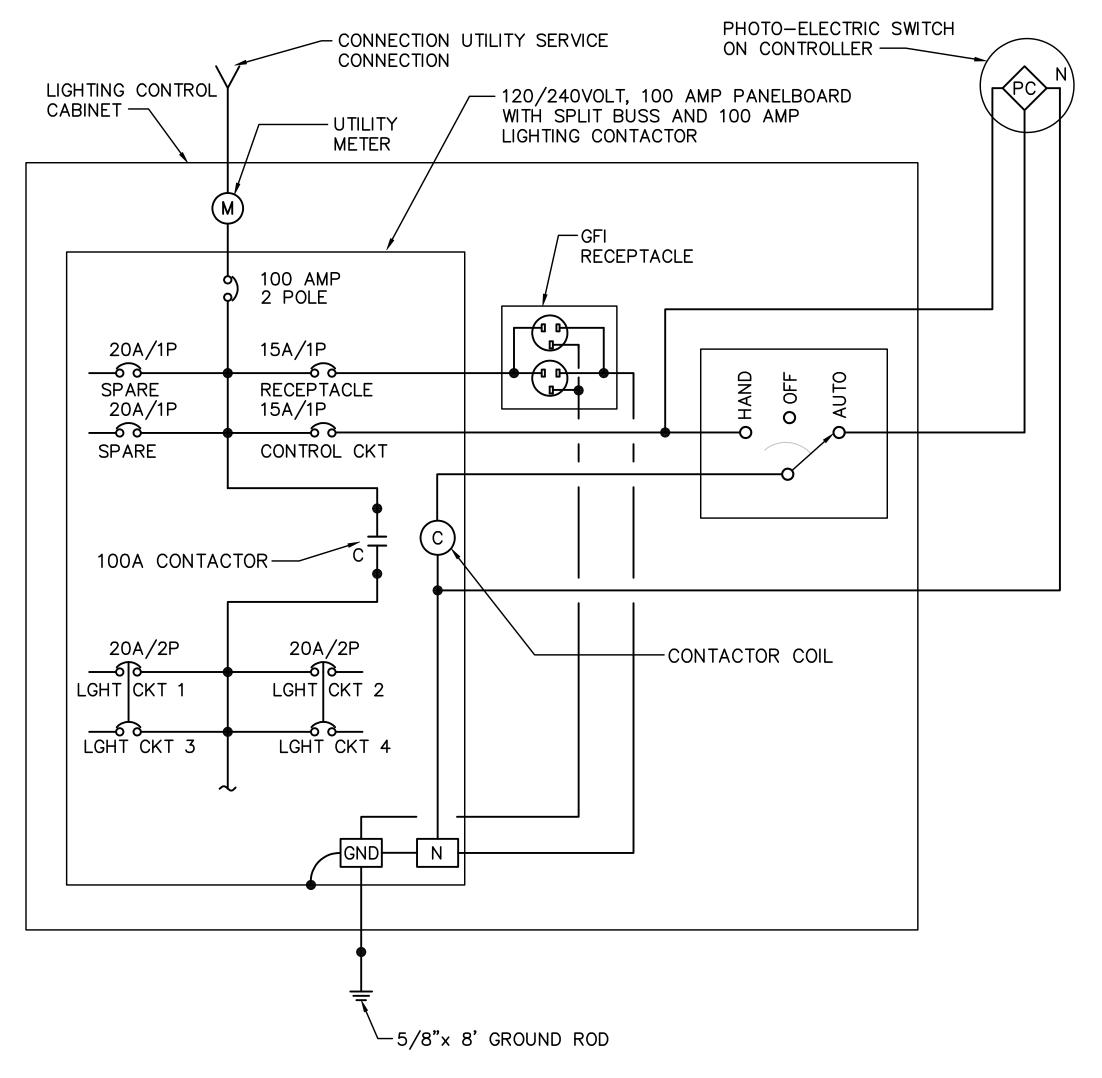
BUS: 120/240V, 1PH, 3W, 60HZ MAIN LUGS ONLY: 100A FEEDER SIZE: 3#2, 1#2-GND					SWITCHED LO	ARD L DADS ONLY ID BAR	C2			CA	ORT CIRCUIT BRACING: 10-KAIC BINET: SURFACE NEL LOCATION: MASSACHUSETTS AVENUE
LOAD SERVED	HP	VA A	VA B	CKT. NO.	` <u> </u>	TRAL B	CKT. NO.	VA A	VA B	HP	LOAD SERVED
LP2, LP6, LP10, LP14, LP18, LP22		624		1	— ऻऀ ॓		2	416			LP26, LP30, LP34, LP38
LP4, LP8, LP12, LP16, LP20			520	3			4		520		LP24, LP28, LP32, LP36, LP40
_		_		5		 •••	6	_			_
_			_	7	6-		8		_		-
_		_		9	—60 →	 •••	10	_			_
_			_	11			12		_		_
_		_		13	—60	 •••	14	_			_
_			_	15	6		16		_		_
VA A: 1040 VA B: 1040 TOTAL CONNECTED LOAD: 6045 VA	•			•				ALL	BRANC	CH C/E	B: 20 AMP TRIP UNLESS OTHERWISE NOTED

ARLINGTON
MASSACHUSETTS AVENUE - ROUTE 2A/3

STATE FED. AID PROJ. NO. SHEET TOTAL SHEETS
MASS. 108 177

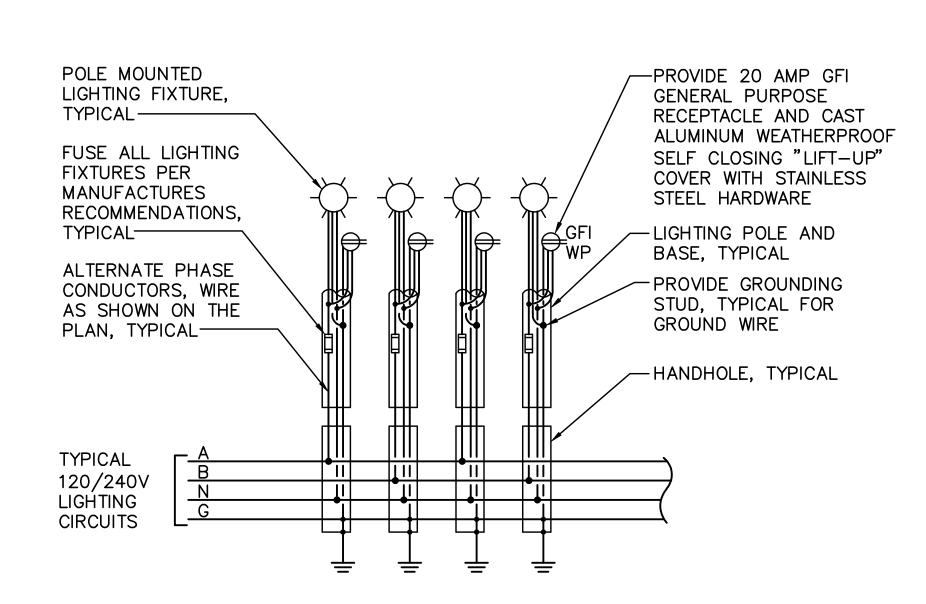
PROJECT FILE NO. 604687

LIGHTING CONTROL DETAILS



ONE LINE DIAGRAM

NOT TO SCALE



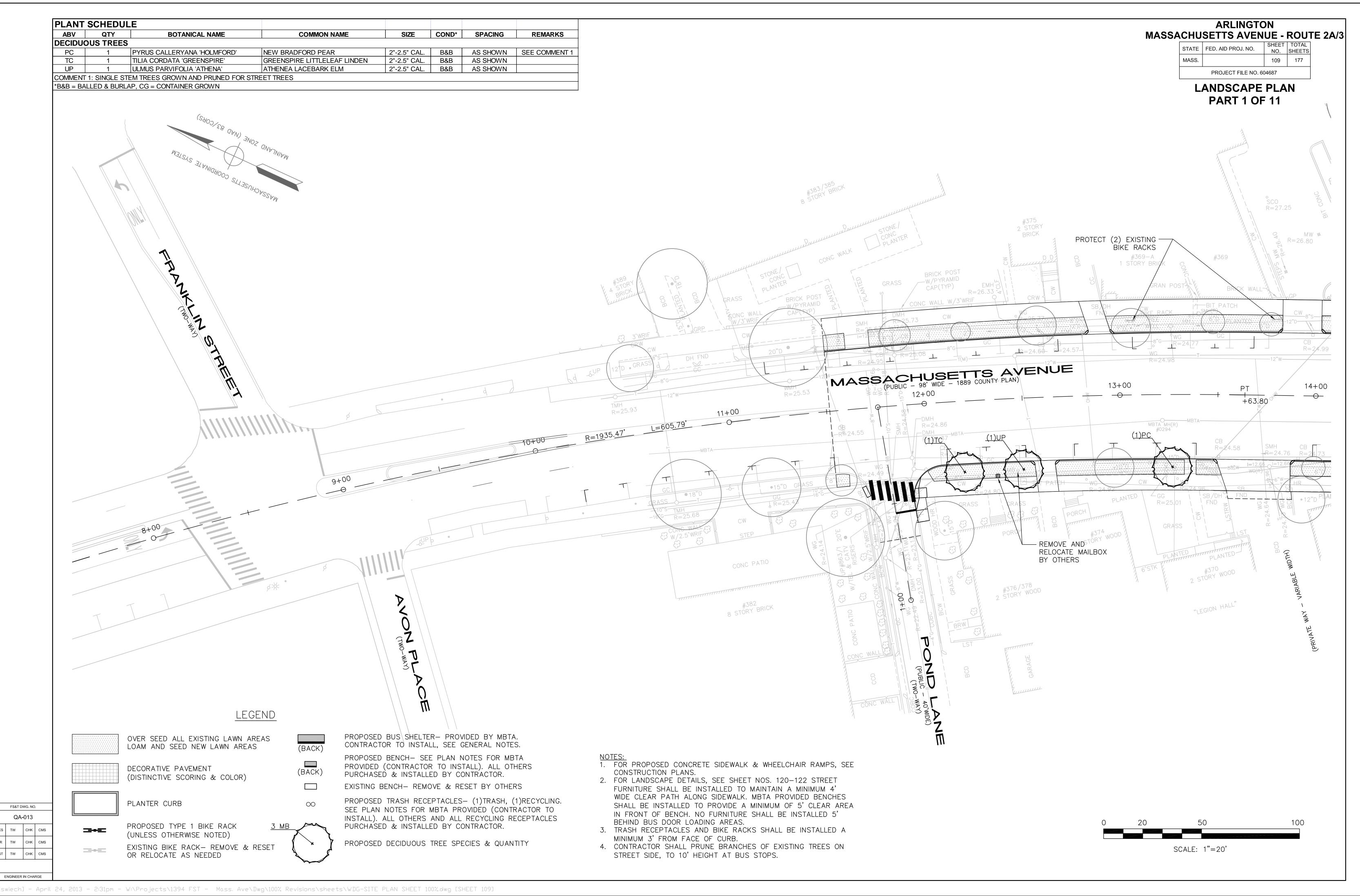
TYPICAL POLE LIGHTING WIRING SCHEMATIC DIAGRAM
NOT TO SCALE

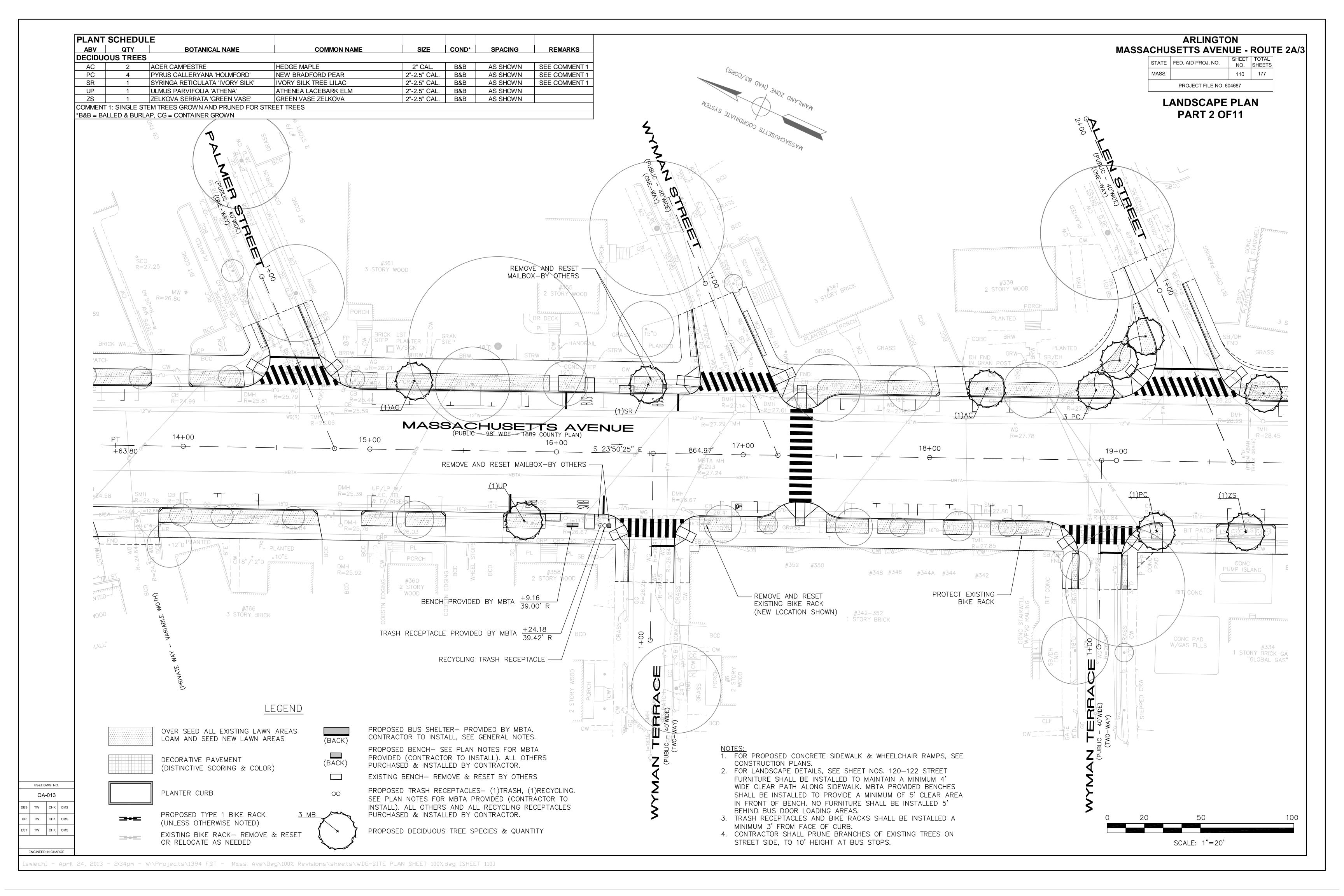
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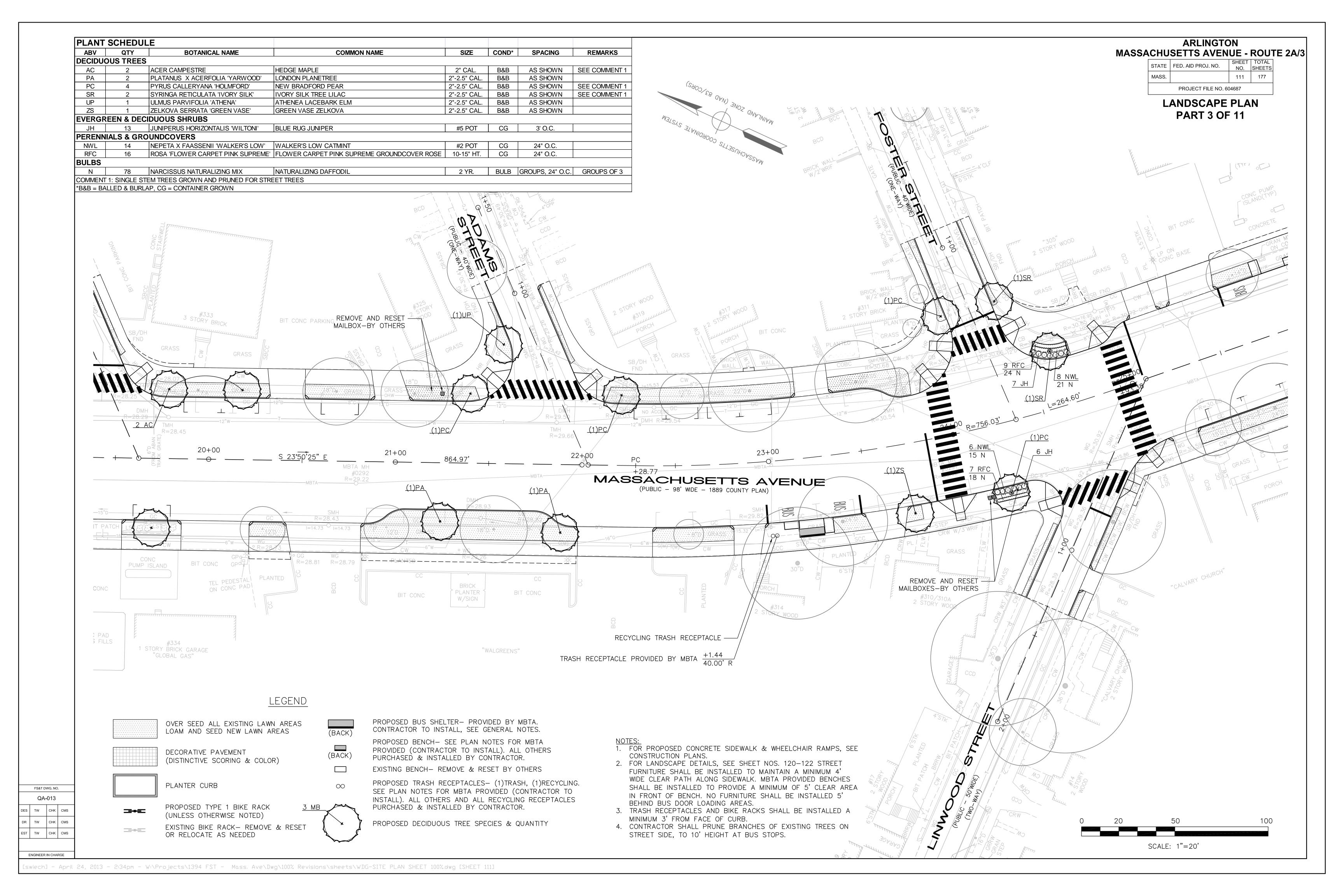
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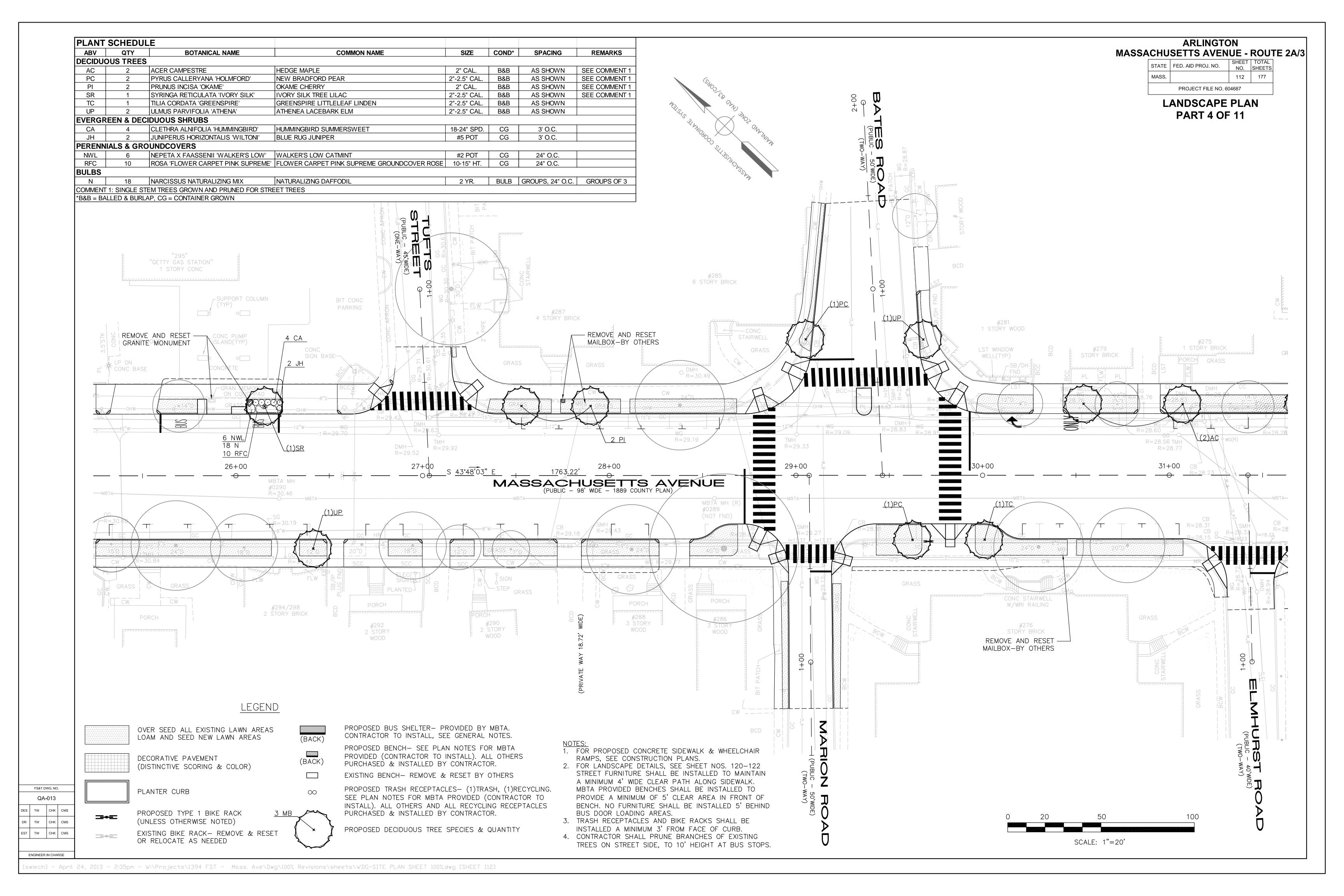
FS&T DWG. NO.

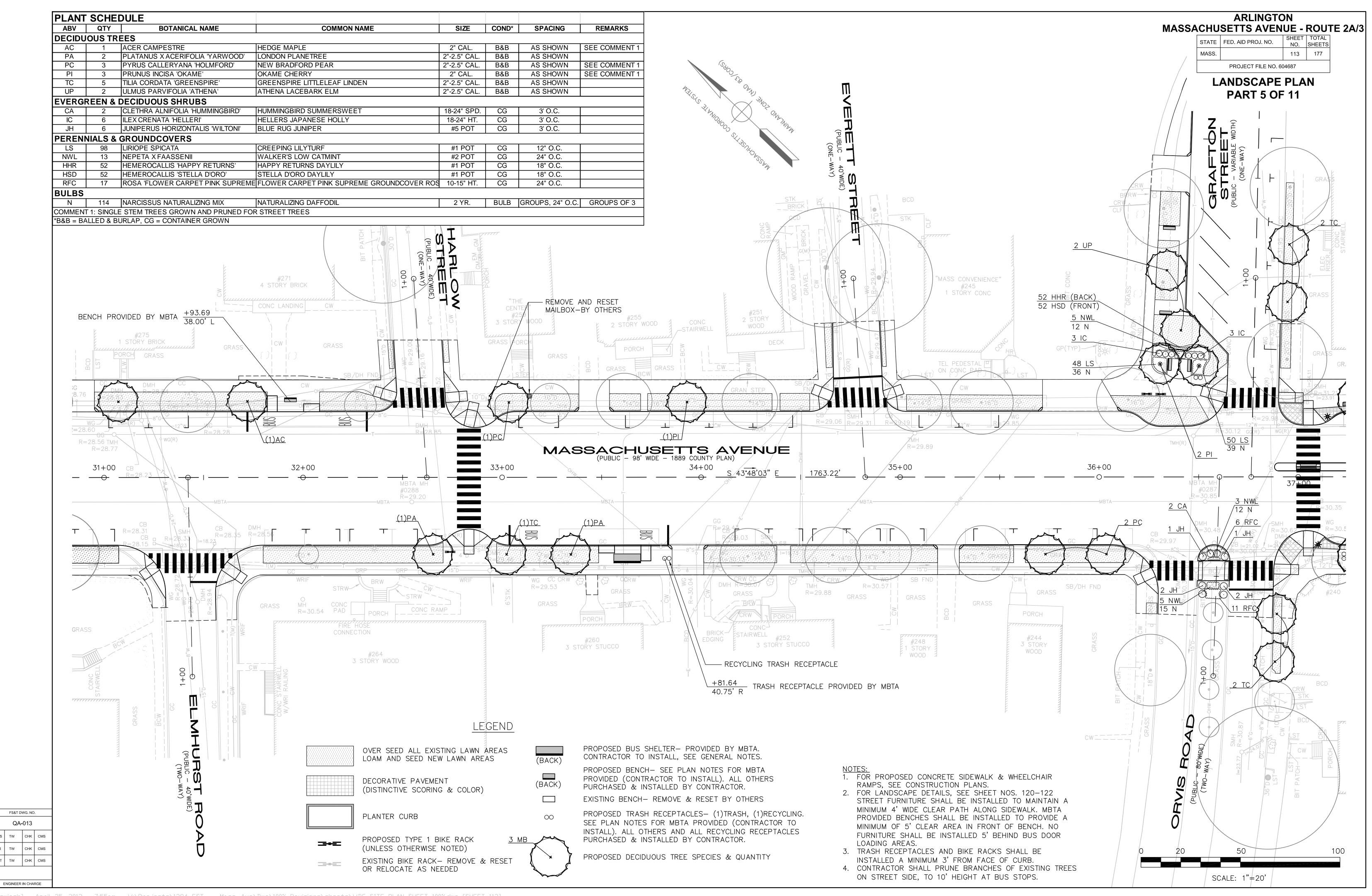
TJM CHK CWPC

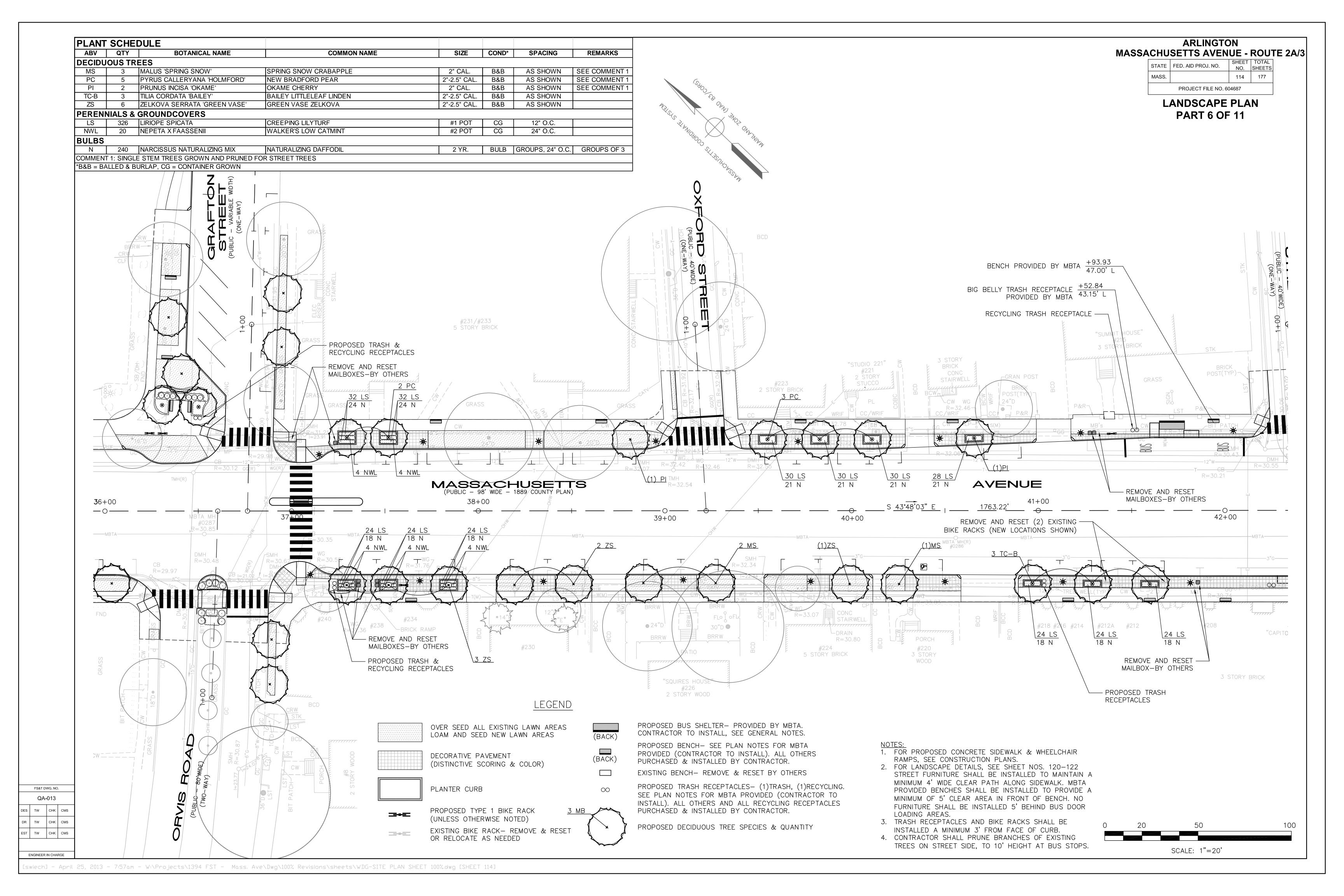


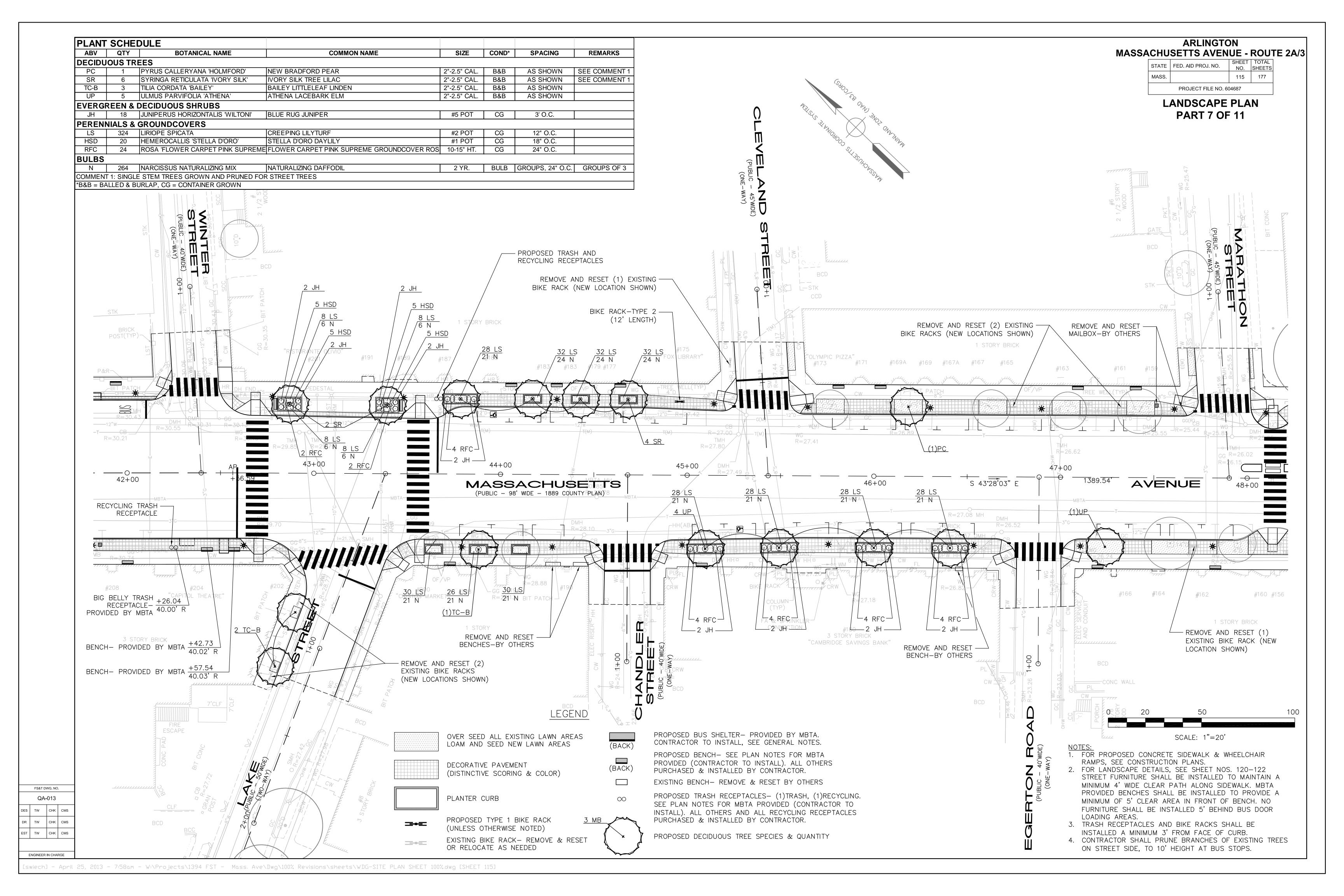


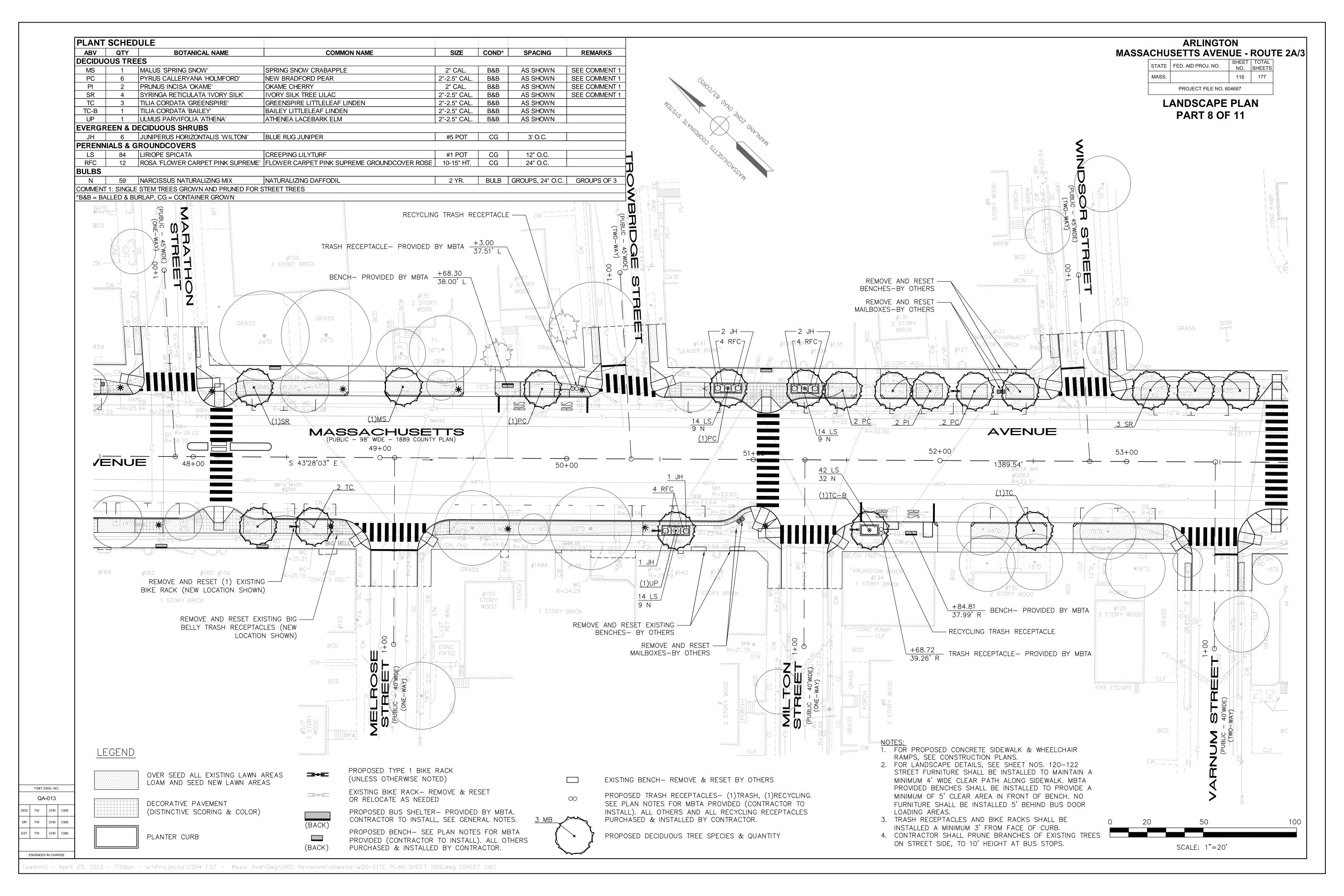


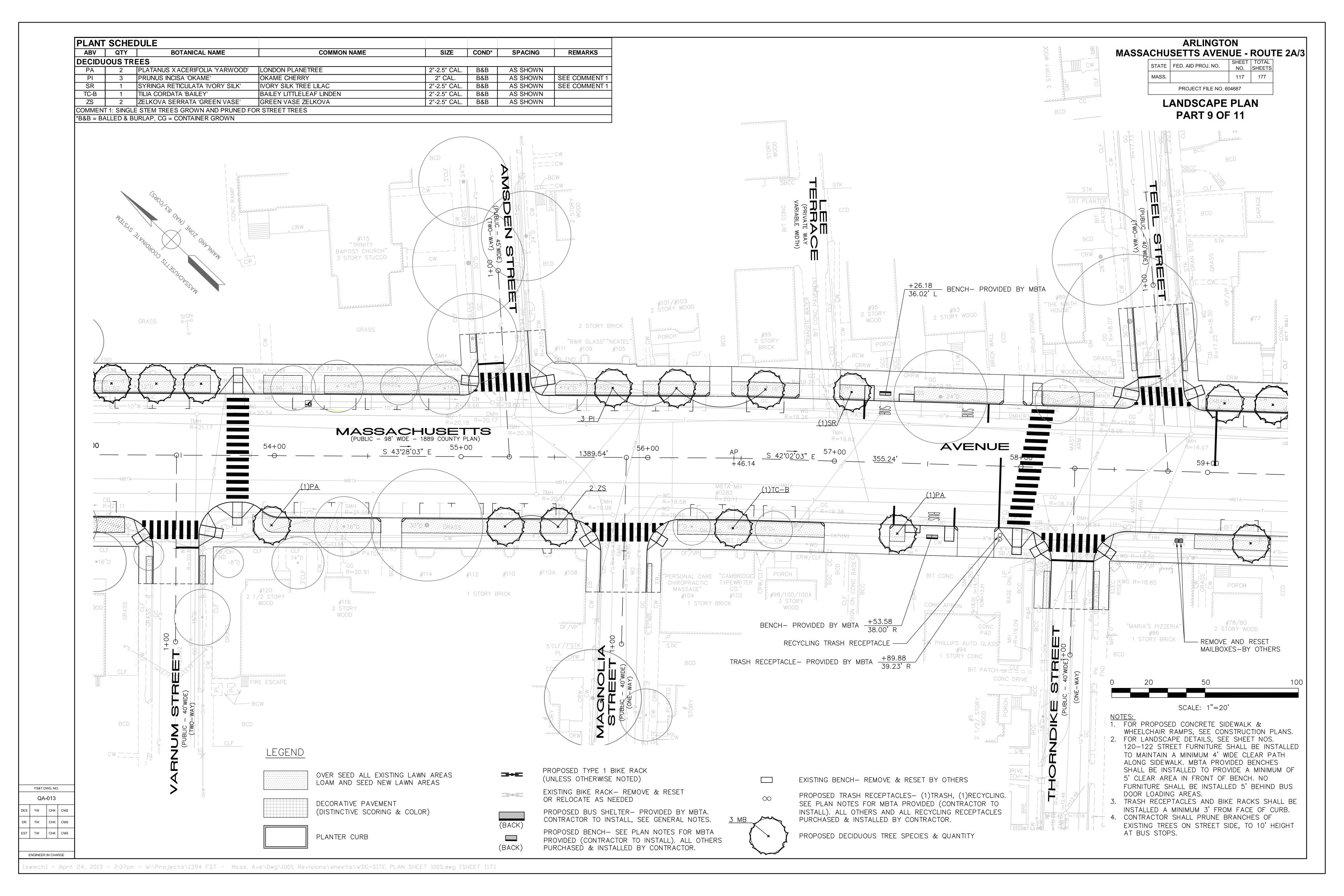


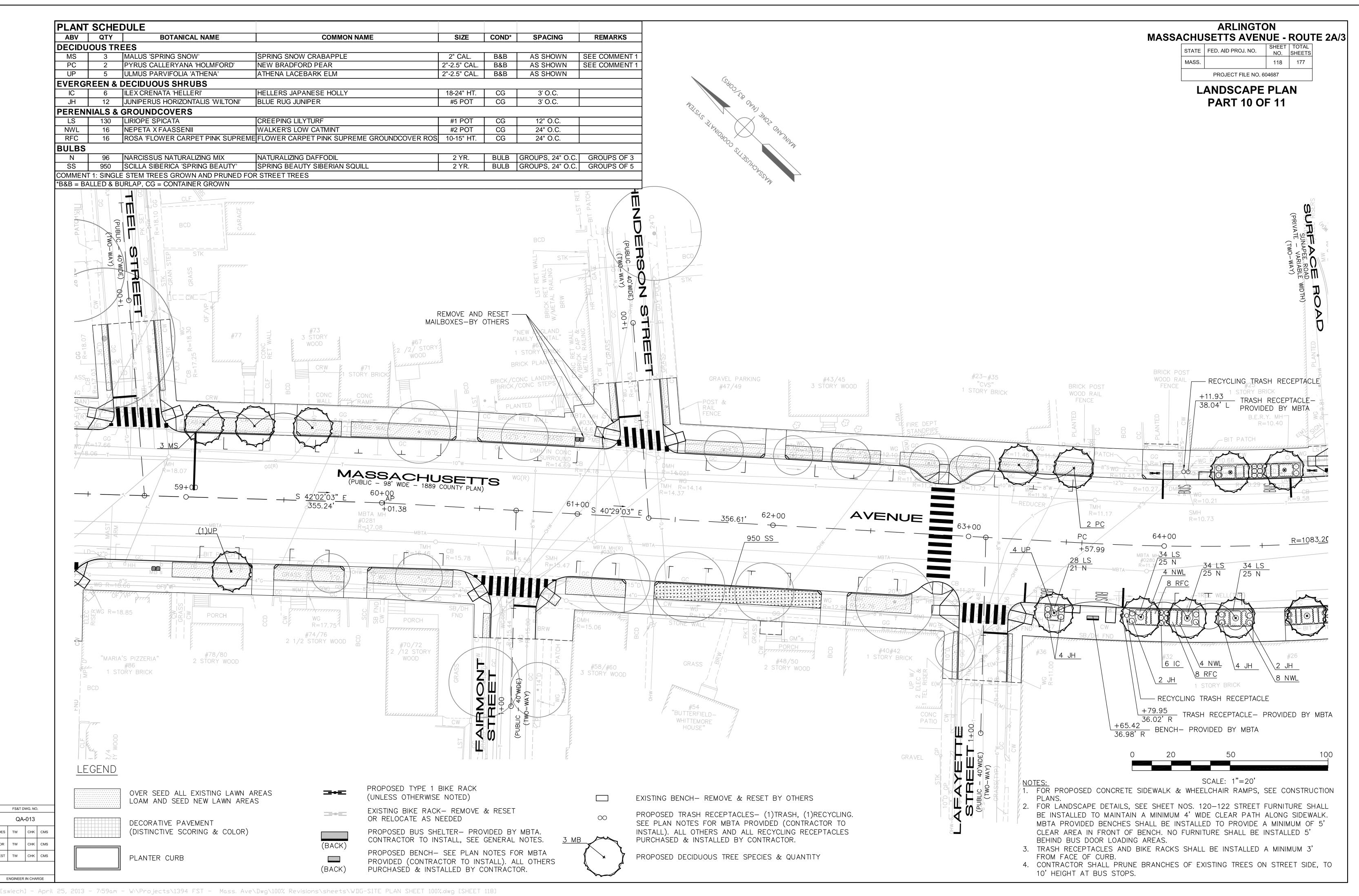


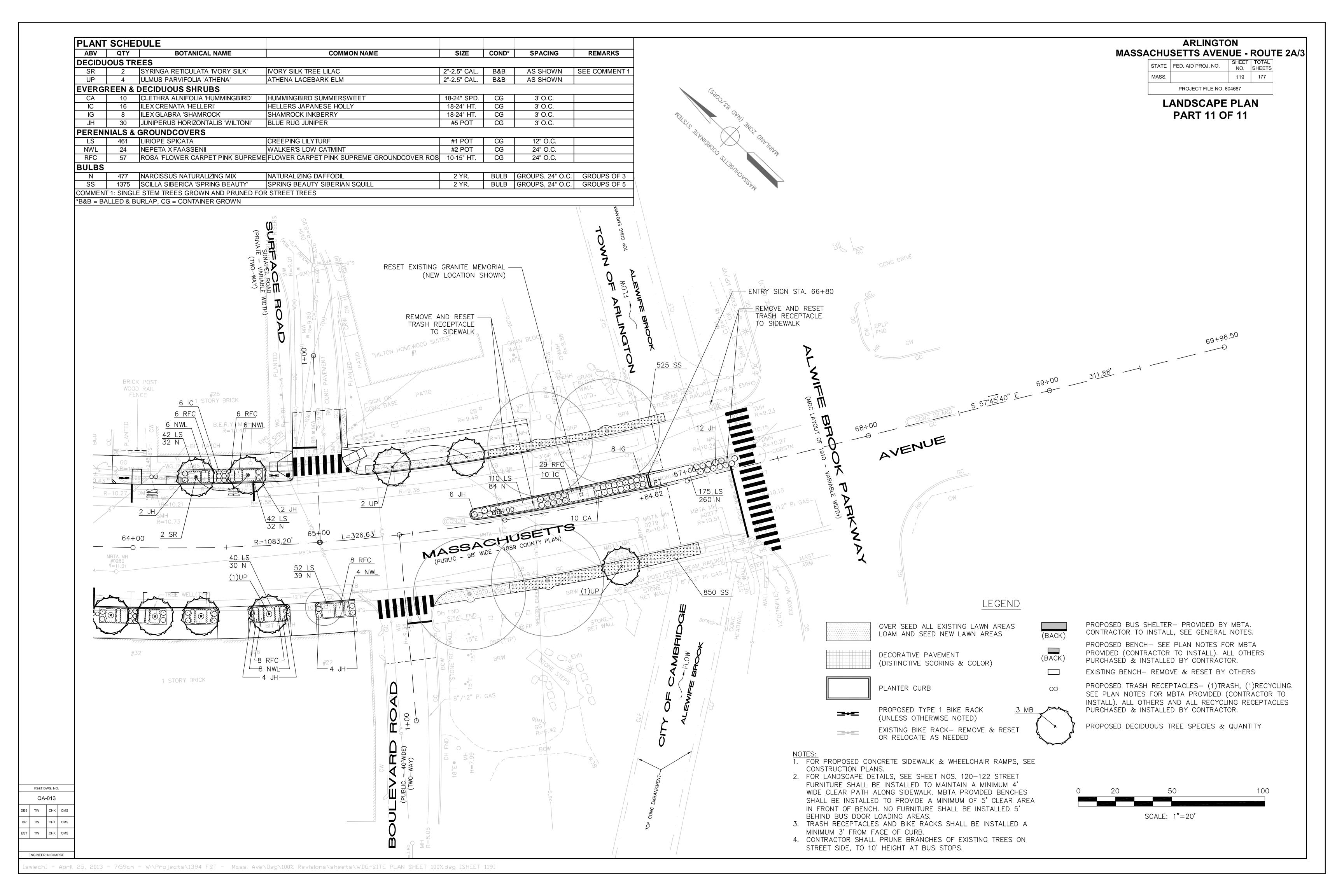












ARLINGTON **MASSACHUSETTS AVENUE - ROUTE 2A/3** STATE FED. AID PROJ. NO. NO. SHEETS HISTORIC TOWN LOGO FULL COLOR ARTWORK 120 | 177 SUPPLIED BY TOWN MAROON BACKGROUND -PROJECT FILE NO. 604687 2" THICK HDU SIGN PANEL LANDSCAPE DETAILS CARVED AND PAINTED "WELCOME" AND "HISTORIC" TYP. - FACE OF 2" THICK HDU FIRST LETTER "W" AND "H" SIZE=2" TALL SIGN PANEL. SIGN TO SHEET 1 OF 3 CARVED AND PAINTED -**→** 3" → FACE RT 16. FONT STYLE-GEORGIA GOLD LETTERS & TRIM BAND EDGE TOOL SURFACE FONT STYLE=TIMES NEW ROMAN, ITALIC ALUMINUM TUBE AT POSTS - MEDIUM BROOM FINISH, SCALE ACCORDING TO WELCOME & HISTORIC GLUED WITH HIGH BOND SEE SPECS. ADHESIVE INTO 1" SQ. NOTCH — 4" TALL SPECIFIED SEALANT TO MIN. CARVED INTO BACK OF Welcome to Historic FONT STYLE-BELL MT 1/2" DEPTH HDU SIGN PANEL. ATTACH WITH NAME SHOULD READ 3'-7" LONG 1'-9" - 4" CEMENT CONCRETE 2-4 CS MACHINE SCREWS. SEE SPECIAL PROVISIONS FOR COLOR ADDITIVE Settled 1635 -FIRST LETTER "S" SIZE=2" TALL PREMOLDED EXPANSION JOINT FONT STYLE-GEORGIA FILLER, CUT BACK 1/2" MIN. AFTER POUR 4"X4"x7'± SOUTHERN YELLOW PINE - 8" COMPACTED -POSTS TO BRIDGE, STAIN POSTS 24" TO 2" DIAMETER MAROON TO MATCH BACKGROUND OF GRAVEL BORROW 22, FACE OF HOLE IN POST SIGN CURB, EXPANSION JOINT- SIDEWALK TOP OF EDGE OF -TYP. - FINISHED GRADE GRANITE CURB OF PLANTER 6" REVEAL VERTICAL 3" OF MULCH TO BE SET 3" MULCH -GRANITE ROADWAY 2" BELOW TOP OF CURB (2" BELOW TOP CURB, (TYP.) - TOOL CONTROL JOINT TO OF CURB) DIMENSIONS SHOWN WITH 1-1/2" EDGER COMPACTED GRAVEL -4 3/4" BORROW 4" CEMENT CONCRETE SEE SPECIAL PROVISIONS FOR COLOR ADDITIVE 18" DEPTH BACKFILL PER STANDARD SPECIAL PROVISION SEE PLANTING DETAILS SHEET 121 1. TOWN REPRESENTATIVE TO APPROVE FULL SCALE SIGN - 8" COMPACTED 18"ø COMPACTED 6" MIN. ARTWORK, SHAPES, AND COLORS. GRAVEL BORROW GRAVEL BORROW (TYP.) 2. TOWN REPRESENTATIVE TO APPROVE POST STAIN COLOR. CONTROL JOINT- SIDEWALK TYP. UNDISTURBED OR COMPACTED SUBGRADE (TYP.) FRONT ELEVATION 3/8" — | - MEDIUM BROOM FINISH, SECTION AT POST SEE SPECS. ENTRY SIGN - SPECIFIED SEALANT TO MIN. 1/2" DEPTH NOT TO SCALE - 4" CEMENT CONCRETE SEE SPECIAL PROVISIONS FOR COLOR ADDITIVE PREMOLDED EXPANSION JOINT FILLER, CUT BACK 1/2" MIN. — 2 3/8" O.D. x 11 GA GALV. STL. PIPE (SEE SPEC FOR FINISH) AFTER POUR - 8" COMPACTED GRAVEL BORROW FINISH GRADE-CONCRETE PAVEMENT EXPANSION JOINT - DECORATIVE PAVING |+16 1/2"+ 4" DEPTH TOOL CONTROL JOINT TO **→** | **→** 3/8" DIMENSIONS SEE DECORATIVE PAVING DETAIL -7/16" DIA. HOLES FOR 3/8" DIA. x 7" FOR PATTERN (DETAIL (A) SHEET GALV. STEEL THRU BOLT 121) BIKE HOOP (TYPE 1) - SURFACE MOUNT - VARIES — (TYPE 2 ALSO SURFACE MOUNT) B 4" CEMENT CONCRETE SEE SPECIAL PROVISIONS NOT TO SCALE FOR COLOR ADDITIVE BENCH LEG; SEE SPECIAL PROVISIONS FOR BENCH — 8" COMPACTED GRAVEL BORROW 3" CHANNEL STEEL CONTROL JOINT- DECORATIVE PAVING SECURE LEG WITH STAINLESS STEEL _1/4" X 2 1/2" STEEL BAR ANCHOR BOLT AND NUT AS REQUIRED 2" MIN. INTO CONCR -STANDARD STAINLESS STEEL BY THE MANUFACTURER. PAINT HEAD LEVELING LEGS, 3 PER INSTALLATION NOTES FOR ALL JOINTS: TO MATCH BENCH. CORE INTO RECEPTACLE CONCRETE PAVING. MUST HAVE 2" MIN. 1. EXPANSION JOINTS 20'-0" O.C. UNLESS SHOWN OTHERWISE FINISH-CONCRETE PAVEMENT, PENETRATION INTO CONCRETE. SET 2. CONTROL JOINTS 6'-0" O.C. UNLESS SHOWN OTHERWISE GRADE WITH NON-SHRINK EPOXY GROUT. 4" DEPTH 3. TOOLED EDGES AND JOINTS, ALL PANELS FOR SIDEWALKS. ELIMINATE AT DECORATIVE PAVING. 4. EXPANSION JOINTS AT ALL VERTICAL SURFACES. 1/2" DIA X 6" EXPANSION BOLT

FS&T DWG. NO.

QA-013

DES TW CHK CMS

DR TW CHK CMS

EST TW CHK CMS

ENGINEER IN CHARGE

TRASH RECEPTACLE - SURFACE MOUNT
NOT TO SCALE



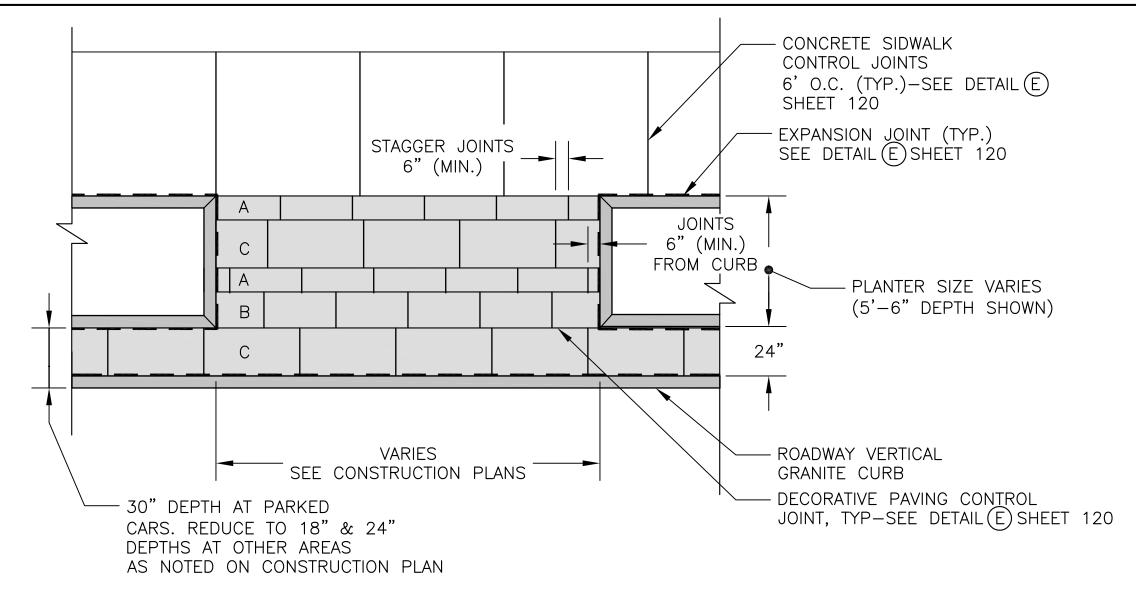
CONCRETE PAVEMENT, 4" DEPTH

E CONCRETE PAVING JOINTS
NOT TO SCALE

(DETAIL (A) , SHEET NO. 121)

5. SEE LANDSCAPE PLANS FOR DECORATIVE PAVING PATTERN LOCATIONS.

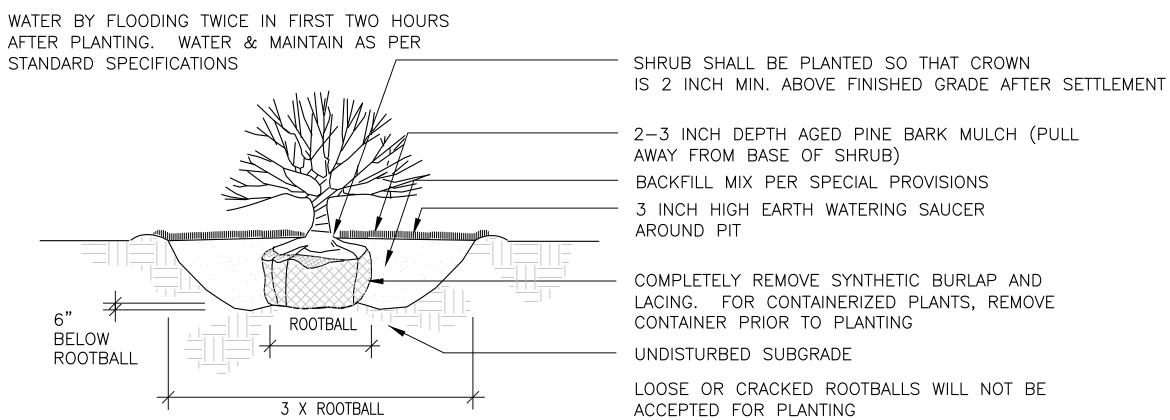
6. SEE DECORATIVE PAVING PATTERN-PLAN VIEW DETAIL FOR PATTERN



DECORATIVE PAVING PATTERN - PLAN VIEW A SCALE: 1/4"=1'-0"

RAISE AND REPLANT ANY SHRUBS WHICH SETTLE MORE THAN 2 INCHES AFTER PLANTING & WATERING IN

SHRUBS SHALL BE SET PLUMB

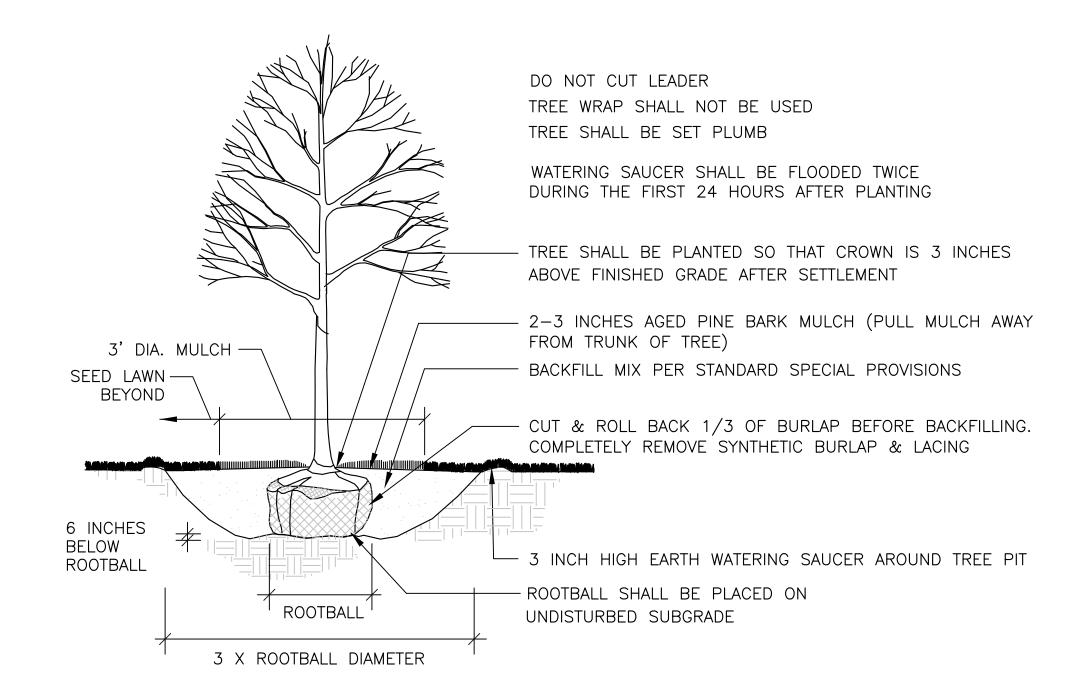




FS&T DWG. NO.

QA-013

ENGINEER IN CHARGE



- 1. EXPANSION JOINTS REQUIRED WHERE CONCRETE MEETS CURBS AND BUILDINGS
- 2. ROW "C" (24" WIDE) IS CONSISTENT BETWEEN ROADWAY CURB AND PLANTER CURB WHERE PARALLEL PARKING IS NOTED. CHART BELOW STARTS AT ROADWAY CURB.
- 3. PATTERN TO BE PARALLEL TO PLANTER CURB IN ALL LOCATIONS.
- 4. CONCRETE COLOR ADDITIVE PER SPECIAL PROVISIONS.

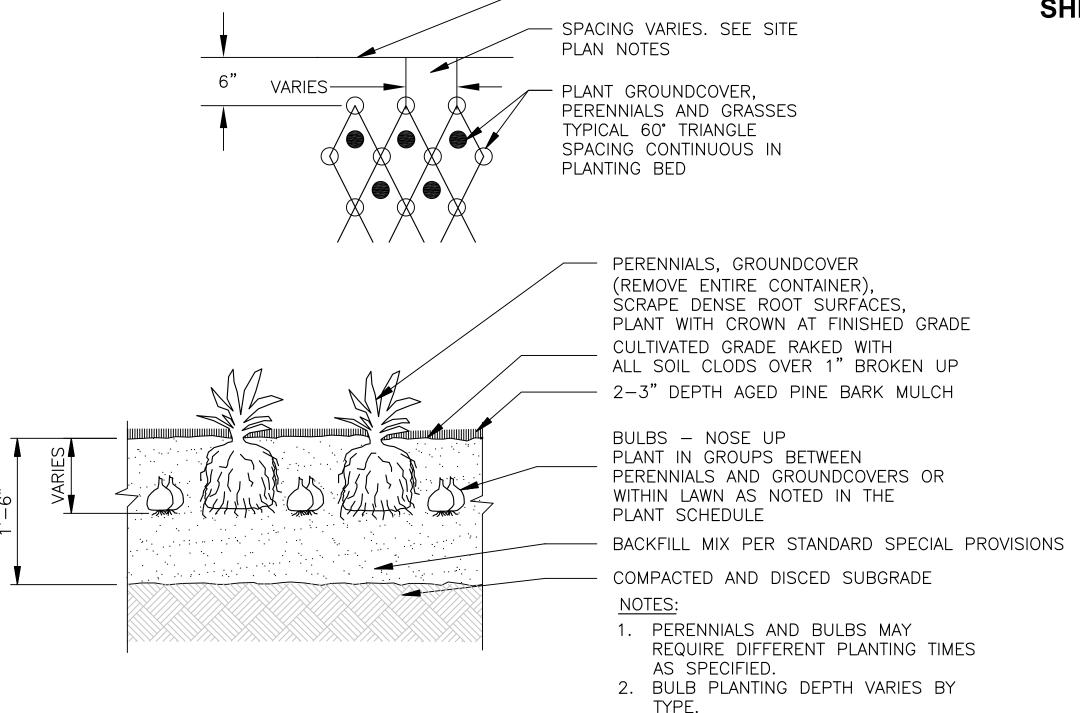
PLANTER DEPTH + EDGE	ROW SEQUENCE
6'-0"	C-B-A-B
6'-6"	C-B-A-C
7'-0"	C-B-A-B-A
7'-6"	C-B-A-C-A
8'-0"	C-B-A-C-B
8'-6"	C-B-C-A-C
9'-0"	C-A-B-C-A-B
9'-6"	C-B-A-C-A-C
10'-6"	C-A-C-B-A-C-A

ROW A = 36"L x 12"W ROW B = 36"L x 18"W ROW C = 48"L x 24"W

ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3

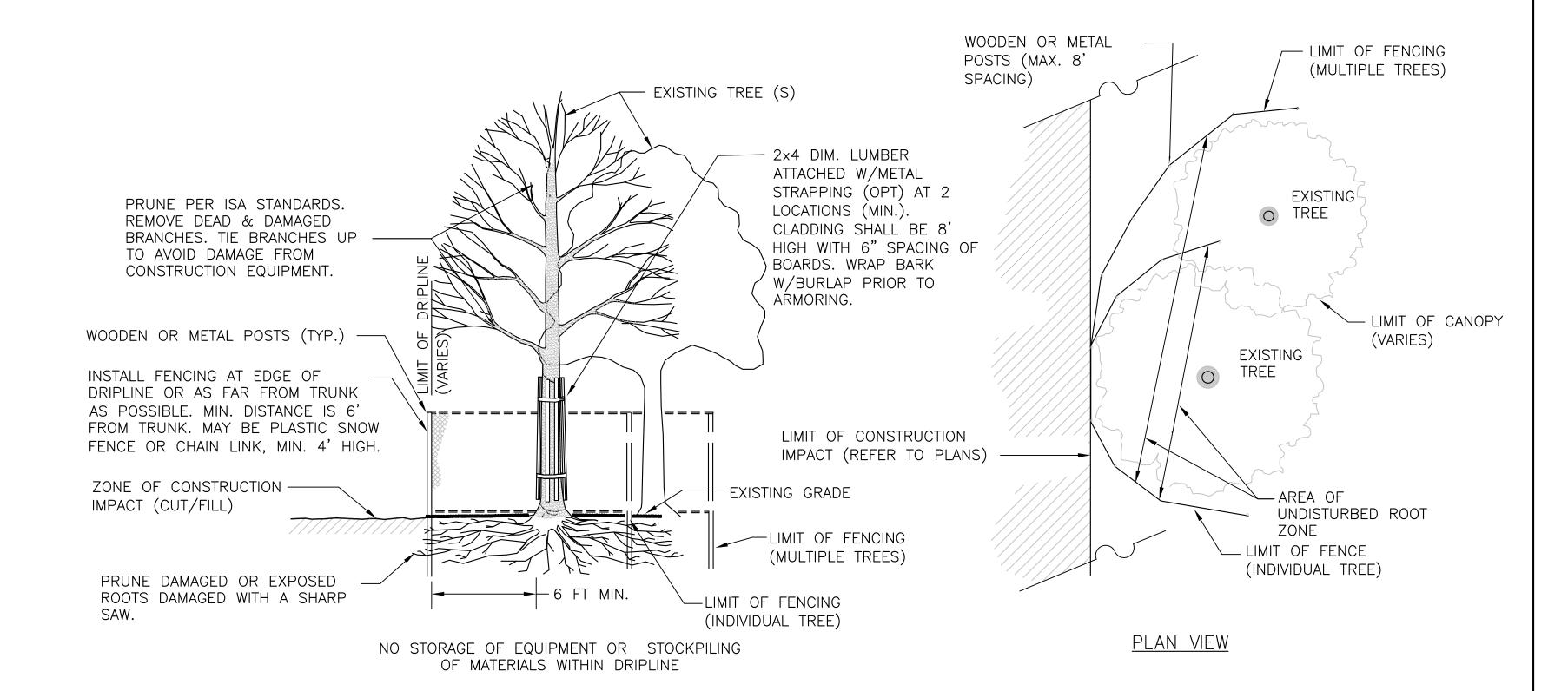
STATE | FED. AID PROJ. NO. NO. SHEETS 121 177 MASS. PROJECT FILE NO. 604687

LANDSCAPE DETAILS SHEET 2 OF 3



EDGE OF PLANTED AREA

PERENNIAL / GROUNDCOVER / BULB PLANTING NOT TO SCALE

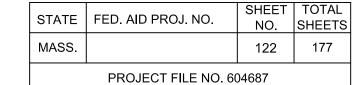




NOT TO SCALE

DECIDUOUS TREE PLANTING IN LAWN

ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3



LANDSCAPE DETAILS
SHEET 3 OF 3

NOTES:

- 1. DO NOT CUT LEADER
- 2. TREE WRAP SHALL NOT BE USED
- 3. TREE SHALL BE SET PLUMB
- 4. FLOOD TWICE DURING THE FIRST 24 HOURS AFTER PLANTING

PLANTING BACKFILL MIX PER — 2-3 INCHES AGED PINE BARK MULCH STANDARD SPECIAL PROVISIONS. (PULL MULCH AWAY FROM TRUNK OF TREE)

—— CUT & ROLL BACK 1/3 OF BURLAP BEFORE BACKFILLING COMPLETELY REMOVE SYNTHETIC BURLAP & LACING

— PLACE TWO FERTILIZER PACKETS IN PLANTING MIX SOIL. PACKET NOT TO BE IN DIRECT CONTACT WITH TREE ROOTS, 6"-8" DEPTH

 $-\frac{3}{8}$ " EXPANSION JOINT (TYP.)

- CONCRETE SIDEWALK AND SUBBASE SEE CONSTRUCTION DETAIL

- CONTINUOUS CONCRETE COLLAR

— UNDISTURBED SUBSURFACE

CURBED PLANTER -SECTION PARALLEL TO ROADWAY CURB NOT TO SCALE

PLANT	SCHE	EDULE					
ABV	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COND*	SPACING	REMARKS
DECIDU	JOUS TI	REES		-			
AC	7	ACER CAMPESTRE	HEDGE MAPLE	2" CAL.	B&B	AS SHOWN	SEE COMMENT 1
MS	7	MALUS 'SPRING SNOW'	SPRING SNOW CRABAPPLE	2" CAL.	B&B	AS SHOWN	SEE COMMENT 1
PA	6	PLATANUS X ACERIFOLIA 'YARWOOD'	LONDON PLANETREE	2"-2.5" CAL.	B&B	AS SHOWN	
PC	28	PYRUS CALLERYANA 'HOLMFORD'	NEW BRADFORD PEAR	2"-2.5" CAL.	B&B	AS SHOWN	SEE COMMENT 1
PI	10	PRUNUS INCISA 'OKAME'	OKAME CHERRY	2" CAL.	B&B	AS SHOWN	SEE COMMENT 1
SR	17	SYRINGA RETICULATA 'IVORY SILK'	IVORY SILK TREE LILAC	2"-2.5" CAL.	B&B	AS SHOWN	SEE COMMENT 1
TC	10	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	2"-2.5" CAL.	B&B	AS SHOWN	
TC-B	8	TILIA CORDATA 'BAILEY'	BAILEY LITTLELEAF LINDEN	2"-2.5" CAL.	B&B	AS SHOWN	
UP	ED	ULMUS PARVIFOLIA 'ATHENA'	ATHENA LACEBARK ELM	2"-2.5" CAL.	B&B	AS SHOWN	
ZS	10	ZELKOVA SERRATA 'GREEN VASE'	GREEN VASE ZELKOVA	2"-2.5" CAL.	B&B	AS SHOWN	
EVERG	REEN 8	DECIDUOUS SHRUBS		-			
CA	16	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	HUMMINGBIRD SUMMERSWEET	18-24" SPD.	CG	3' O.C.	
IC	28	ILEX CRENATA 'HELLERI'	HELLERS JAPANESE HOLLY	18-24" HT.	CG	3' O.C.	
IG	8	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	18-24" HT.	CG	3' O.C.	
JH	87	JUNIPERUS HORIZONTALIS 'WILTONI'	BLUE RUG JUNIPER	#5 POT	CG	3' O.C.	
PEREN	NIALS 8	& GROUNDCOVERS		•			
LS	1423	LIRIOPE SPICATA	CREEPING LILYTURF	#1 POT	CG	12" O.C.	
NWL	93	NEPETA X FAASSENII	WALKER'S LOW CATMINT	#2 POT	CG	24" O.C.	
HHR	52	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	#1 POT	CG	18" O.C.	
HSD	72	HEMEROCALLIS 'STELLA D'ORO'	STELLA D'ORO DAYLILY	#1 POT	CG	18" O.C.	
RFC	152	ROSA 'FLOWER CARPET PINK SUPREME'	FLOWER CARPET PINK SUPREME GROUNDCOVER ROSI	10-15" HT.	CG	24" O.C.	
BULBS							
N	1346	NARCISSUS NATURALIZING MIX	NATURALIZING DAFFODIL	2 YR.	BULB	GROUPS, 24" O.C.	GROUPS OF 3
SS	2325	SCILLA SIBERICA 'SPRING BEAUTY'	SPRING BEAUTY SIBERIAN SQUILL	2 YR.	BULB	GROUPS, 24" O.C.	GROUPS OF 5
COMMEN	T 1: SING	LE STEM TREES GROWN AND PRUNED FOR ST	REET TREES				
*B&B = B/	ALLED &	BURLAP, CG = CONTAINER GROWN		•		'	

PLANTER LENGTH VARIES SEE CONSTRUCTION PLANS

PLANT SCHEDULE SUMMARY

NOT TO SCALE

FS&T DWG. NO.

SEE SHRUB/PERENNIAL/ — GROUNDCOVER/BULB

AFTER SETTLEMENT

COMPACTED LOAM

18" MIN. DEPTH.

5"W x 15-17"HT VB ---

4" REVEAL (TYP.)

2"BELOW TOP

GRANITE CURB

KEEP MULCH —

OF CURB

PLANTING DETAILS- SHEET 121

PLANT TREE SO THAT CROWN ——
IS 3" ABOVE FINISHED GRADE

ROOTBALL SHALL BE PLACED —

ON UNDISTURBED SUBGRADE OR

WHEELCHAIR RAMP LAYOUT DATA

WCR	RAMP TYPE	RAMP REFEREN	CE POINT	Γ	WIDTH OF SIDEWALK	WIDTH OF	OF	ROADWAY GUTTER	TRANSITIC	N LENGTH
	111 -	BASELINE	STATION	OFFSET	(W)	RAMP	RAMP	SLOPE	LEFT SIDE	RIGHT SIDE
1	EXIST	POND LANE	00+41.58	11.57 RT	_	5.00'		3.60	6.00'	6.00'
2	В	POND LANE	00+46.50	10.92 LT	_	5.00'	2.36'	-1.60	6.50'	6.50'
3	Α	PALMER STREET	00+51.71	18.14 LT	_	5.00'	8.33'	0.90%	6.50'	7.67'
4	D	PALMER STREET	00+38.84	12.47 RT	_	5.00'	4.50'	-2.00%	9.00'	6.50'
5	D	WYMAN TERRACE 1	00+40.78	13.54 RT	_	5.00'	5.00'	-1.40%	9.00'	6.50'
6	D	WYMAN TERRACE 1	00+40.78	13.56 LT	_	5.00'	6.00'	0.00%	6.50'	6.50'
7	Α	WYMAN STREET	00+52.00	22.85 LT	_	5.00'	8.33'	0.00%	6.50'	6.50'
8	Α	WYMAN STREET	00+37.59	13.18 RT	_	5.00'	8.33'	0.50%	6.50'	7.67'
9	Α	MASS AVE	17+30.92	24.92 LT	24.00'	5.00'	8.33'	0.00%	6.50'	6.50'
10	Α	MASS AVE	17+30.97	25.00 RT	18.00'	5.00'	8.33'	-0.70%	7.67	6.50'
11	D	WYMAN TERRACE 2	00+41.33	15.02 RT	_	5.00	4.00'	-0.70%	7.67'	6.50'
12	D	WYMAN TERRACE 2	00+41.33	15.08 LT	_	5.00'	4.00'	0.10%	6.50'	7.67'
13	Α	ALLEN STREET	00+57.27	26.36 LT	_	5.00'	8.33'	1.10%	6.50'	9.00'
14	Α	ALLEN STREET	00+39.27	13.04 RT	_	5.00'	8.33'	-0.40%	7.67'	6.50'
15	Α	ADAMS STREET	00+57.05	25.88 LT	_	5.00'	8.33'	1.00%	6.50'	7.67'
16	Α	ADAMS STREET	00+39.62	13.22 RT	_	5.00'	8.33'	0.50%	6.50'	7.67'
17	Α	MASS AVE	23+95.13	33.39 RT	14.70'	5.00'	8.33'	0.20%	8.43'	7.67'
18	Α	MASS AVE	23+95.53	28.50 LT	_	5.00'	8.33'	0.50%	6.50'	7.67'
19	Α	FOSTER STREET	00+49.18	15.91 LT	_	5.00'	8.33'	0.50%	6.50'	7.67'
20	Α	FOSTER STREET	00+45.89	12.03 RT	_	5.00'	8.33'	-0.60%	7.67'	6.50'
21	A	LINWOOD STREET	00+77.36	15.45 RT	_	5.00'	8.33'	2.90%	6.50'	11.00'
22	В	LINWOOD STREET	00+55.88	12.18 LT	7.87'	5.00'	3.87	-1.40%	9.00'	6.50'
23	В	MASS AVE	24+96.36		_	5.00'	6.00'	-1.10%	9.00'	6.50'
24	A	MASS AVE	24+95.92	25.00 LT	_	5.00'	8.33'	-0.60%	7.67'	6.50'
25	В	TUFTS STREET	00+42.72	21.52 LT	_	5.00'	5.50'	-0.70%	7.67	6.50'
26	A	TUFTS STREET	00+40.61	19.98 RT	_	5.00'	8.33'	-0.50%	7.67	6.50'
WCR	RAMP	RAMP REFEREN	L		WIDTH OF SIDEWALK	WIDTH OF	LENGTH OF			N LENGTH
#	TYPE	BASELINE	STATION	OFFSET	(W)	RAMP	RAMP	SLOPE	LEFT SIDE	RIGHT SIDE
27	Α	11100 115								
28		MASS AVE	28+82.84	34.61 LT	_	5.00'	8.33'	-0.40%	7.67'	6.50'
	Α	MASS AVE MASS AVE	28+82.84 28+82.30	34.61 LT 28.32 RT	_ _	5.00' 5.00'	8.33' 8.33'	-0.40% -0.20%	7.67 ' 7.67 '	
29	A D		_							6.50'
29 30		MASS AVE	28+82.30	28.32 RT	_	5.00'	8.33'	-0.20%	7.67'	6.50' 6.50'
$\overline{}$	D	MASS AVE MARION ROAD	28+82.30 00+42.16	28.32 RT 12.73 RT	_ _	5.00' 5.00'	8.33' 5.00'	-0.20% -0.20%	7.67' 7.67'	6.50' 6.50' 6.50'
30	D D	MASS AVE MARION ROAD MARION ROAD	28+82.30 00+42.16 00+43.51	28.32 RT 12.73 RT 12.48 LT 39.05 LT	_ _ _	5.00' 5.00' 5.00'	8.33' 5.00' 6.00'	-0.20% -0.20% +0.40%	7.67' 7.67' 6.00'	6.50' 6.50' 6.50' 0.00'
30 31	D D A	MASS AVE MARION ROAD MARION ROAD BATES ROAD	28+82.30 00+42.16 00+43.51 00+55.33	28.32 RT 12.73 RT 12.48 LT 39.05 LT	- - -	5.00' 5.00' 5.00' 5.00'	8.33' 5.00' 6.00' 8.33'	-0.20% -0.20% +0.40% -0.40%	7.67' 7.67' 6.00' 7.67'	6.50' 6.50' 6.50' 0.00' 6.50'
30 31 32	D D A A	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT	- - -	5.00' 5.00' 5.00' 5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33'	-0.20% -0.20% +0.40% -0.40% 0.00%	7.67' 7.67' 6.00' 7.67' 6.50'	6.50' 6.50' 6.50' 0.00' 6.50' 6.50'
30 31 32 33	D D A A A A	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT	- - - -	5.00' 5.00' 5.00' 5.00' 5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67'	6.50' 6.50' 6.50' 0.00' 6.50' 6.50'
30 31 32 33 34	D D A A A A	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT	- - - -	5.00' 5.00' 5.00' 5.00' 5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 8.33'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67'	6.50' 6.50' 6.50' 0.00' 6.50' 6.50' 7.67'
30 31 32 33 34 35	D D A A A A B	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE ELMHURST ROAD	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63 00+43.94	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT 16.55 RT	- - - - - - 23.00'	5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 8.33' 5.00'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90% -4.20%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67' 6.50' 15.00'	6.50' 6.50' 6.50' 0.00' 6.50' 6.50' 7.67' 6.50'
30 31 32 33 34 35 36	D D A A A A A B A	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE ELMHURST ROAD ELMHURST ROAD	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63 00+43.94 00+44.67	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT 16.55 RT 17.14 LT	- - - - - 23.00' - -	5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 5.00' 8.33'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90% -4.20% 1.10%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67' 6.50' 15.00' 6.50'	6.50' 6.50' 0.00' 6.50' 6.50' 6.50' 7.67' 6.50' 9.00'
30 31 32 33 34 35 36 37	D D A A A A A A A A A A A A A A A A A A	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE ELMHURST ROAD ELMHURST ROAD HARLOW STREET	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63 00+43.94 00+44.67 00+41.07	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT 16.55 RT 17.14 LT 12.88 LT 11.92 RT	- - - - - 23.00' - -	5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 5.00' 8.33' 8.33'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90% -4.20% 1.10% 0.40%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67' 6.50' 15.00' 6.50'	6.50' 6.50' 0.00' 6.50' 6.50' 6.50' 7.67' 6.50' 9.00' 7.67'
30 31 32 33 34 35 36 37 38	D D A A A A A A A A A A A A A A A A A A	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE ELMHURST ROAD ELMHURST ROAD HARLOW STREET HARLOW STREET	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63 00+43.94 00+44.67 00+41.07 00+39.29	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT 16.55 RT 17.14 LT 12.88 LT 11.92 RT	- - - - - 23.00' - - -	5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 5.00' 8.33' 8.33' 8.33'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90% -4.20% 1.10% 0.40% -2.10%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67' 6.50' 15.00' 6.50' 11.00'	6.50' 6.50' 0.00' 6.50' 6.50' 6.50' 7.67' 6.50' 9.00' 7.67' 6.50'
30 31 32 33 34 35 36 37 38 39	D D A A A A A A A A A A A	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE ELMHURST ROAD ELMHURST ROAD HARLOW STREET HARLOW STREET MASS AVE	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63 00+43.94 00+44.67 00+41.07 00+39.29 32+83.23	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT 16.55 RT 17.14 LT 12.88 LT 11.92 RT 25.37 LT	- - - - - 23.00' - - - -	5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 5.00' 8.33' 8.33' 8.33' 8.33'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90% -4.20% 1.10% 0.40% -2.10% 0.00%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67' 6.50' 15.00' 6.50' 11.00' 6.50'	6.50' 6.50' 0.00' 6.50' 6.50' 6.50' 7.67' 6.50' 9.00' 7.67' 6.50' 6.50'
30 31 32 33 34 35 36 37 38 39 40	D A A A A B A A A A A A A A A A A A A A	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE ELMHURST ROAD ELMHURST ROAD HARLOW STREET HARLOW STREET MASS AVE MASS AVE	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63 00+43.94 00+44.67 00+41.07 00+39.29 32+83.23 32+83.35	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT 16.55 RT 17.14 LT 12.88 LT 11.92 RT 25.37 LT 26.00 RT	- - - - - 23.00' - - - -	5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 5.00' 8.33' 8.33' 8.33' 8.33' 8.33'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90% -4.20% 1.10% 0.40% -2.10% 0.00% -0.30%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67' 6.50' 15.00' 6.50' 11.00' 6.50' 7.67'	6.50' 6.50' 0.00' 6.50' 6.50' 6.50' 7.67' 6.50' 9.00' 7.67' 6.50' 6.50' 6.50'
30 31 32 33 34 35 36 37 38 39 40 41	D D A A A A A A A D D	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE ELMHURST ROAD ELMHURST ROAD HARLOW STREET HARLOW STREET MASS AVE MASS AVE EVERETT STREET	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63 00+43.94 00+44.67 00+41.07 00+39.29 32+83.23 32+83.35 00+41.42	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT 16.55 RT 17.14 LT 12.88 LT 11.92 RT 25.37 LT 26.00 RT 14.32 LT	- - - - - 23.00' - - - - 23.00'	5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 5.00' 8.33' 8.33' 8.33' 8.33' 8.33' 6.00'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90% -4.20% 1.10% 0.40% -2.10% 0.00% -0.30% 0.60%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67' 6.50' 15.00' 6.50' 11.00' 6.50' 7.67' 6.50'	6.50' 6.50' 0.00' 6.50' 6.50' 6.50' 7.67' 6.50' 9.00' 7.67' 6.50' 6.50' 6.50' 7.67'
30 31 32 33 34 35 36 37 38 39 40 41 42	D D A A A A A A D D D	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE ELMHURST ROAD ELMHURST ROAD HARLOW STREET HARLOW STREET MASS AVE MASS AVE EVERETT STREET EVERETT STREET	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63 00+43.94 00+44.67 00+41.07 00+39.29 32+83.23 32+83.23 32+83.23 00+41.42 00+40.26	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT 16.55 RT 17.14 LT 12.88 LT 11.92 RT 25.37 LT 26.00 RT 14.32 LT 11.91 RT	- - - - - 23.00' - - - 23.00'	5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 5.00' 8.33' 8.33' 8.33' 8.33' 6.00' 6.00' 6.00'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90% -4.20% 1.10% 0.40% -2.10% 0.00% -0.30% -0.30% -1.00%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67' 6.50' 15.00' 6.50' 11.00' 6.50' 7.67' 6.50' 7.67' 9.00'	6.50' 6.50' 6.50' 6.50' 6.50' 6.50' 6.50' 7.67' 6.50' 9.00' 7.67' 6.50' 6.50' 7.67' 6.50' 6.50' 6.50' 7.67' 7.67' 6.50'
30 31 32 33 34 35 36 37 38 39 40 41 42 43	D D A A A A A A A D D D D	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE ELMHURST ROAD ELMHURST ROAD HARLOW STREET HARLOW STREET MASS AVE EVERETT STREET ORVIS ROAD	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63 00+43.94 00+44.67 00+41.07 00+39.29 32+83.23 32+83.35 00+41.42 00+40.26 00+48.76	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT 16.55 RT 17.14 LT 12.88 LT 11.92 RT 25.37 LT 26.00 RT 14.32 LT 11.91 RT 31.57 RT 28.75 LT	- - - - - 23.00' - - - 23.00'	5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 5.00' 8.33' 8.33' 8.33' 8.33' 6.00' 6.00'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90% -4.20% 1.10% 0.40% -2.10% 0.00% -0.30% -0.30% -1.10%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67' 6.50' 15.00' 6.50' 11.00' 6.50' 7.67' 6.50' 7.67'	6.50' 6.50' 6.50' 0.00' 6.50' 6.50' 7.67' 6.50' 9.00' 7.67' 6.50' 6.50' 6.50' 7.67' 7.67'
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44	D D A A A A B A A A A D D D A	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE ELMHURST ROAD ELMHURST ROAD HARLOW STREET HARLOW STREET MASS AVE EVERETT STREET ORVIS ROAD ORVIS ROAD	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63 00+43.94 00+44.67 00+41.07 00+39.29 32+83.23 32+83.35 00+41.42 00+40.26 00+45.34 00+39.43	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT 16.55 RT 17.14 LT 12.88 LT 11.92 RT 25.37 LT 26.00 RT 14.32 LT 11.91 RT 31.57 RT 28.75 LT 13.77 LT	- - - - - 23.00' - - - 23.00' - - - -	5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 5.00' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90% -4.20% 1.10% 0.40% -2.10% 0.00% -0.30% -1.00% -1.10% -1.00% 1.50%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67' 6.50' 15.00' 6.50' 11.00' 6.50' 7.67' 6.50' 7.67' 6.50' 7.67' 9.00' 7.67' 6.50'	6.50' 6.50' 6.50' 6.50' 6.50' 6.50' 6.50' 7.67' 6.50' 9.00' 7.67' 6.50' 6.50' 7.67' 7.67' 7.67' 9.00'
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	D D A A A A A A A A A A A A A A A A A A	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE ELMHURST ROAD ELMHURST ROAD HARLOW STREET HARLOW STREET MASS AVE EVERETT STREET ORVIS ROAD ORVIS ROAD GRAFTON STREET	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63 00+43.94 00+44.67 00+41.07 00+39.29 32+83.23 32+83.35 00+41.42 00+40.26 00+45.34 00+39.43 00+40.30	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT 16.55 RT 17.14 LT 12.88 LT 11.92 RT 25.37 LT 26.00 RT 14.32 LT 11.91 RT 31.57 RT 28.75 LT 13.77 LT 12.87 RT	- - - - - 23.00' - - - 23.00' - - - - -	5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 5.00' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90% -4.20% 1.10% 0.40% -2.10% 0.00% -0.30% -0.30% -1.10% -1.10% -1.50% -0.50%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67' 6.50' 15.00' 6.50' 11.00' 6.50' 7.67' 6.50' 7.67' 9.00' 7.67' 9.00' 7.67'	6.50' 6.50' 6.50' 6.50' 6.50' 6.50' 6.50' 7.67' 6.50' 9.00' 7.67' 6.50' 6.50' 7.67' 7.67' 7.67' 6.50' 9.00' 7.67' 6.50' 6.50' 6.50' 6.50' 6.50'
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	D D A A A A A A A A A A A A A A A A A A	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE ELMHURST ROAD ELMHURST ROAD HARLOW STREET HARLOW STREET MASS AVE EVERETT STREET EVERETT STREET ORVIS ROAD ORVIS ROAD GRAFTON STREET MASS AVE	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63 00+43.94 00+44.67 00+41.07 00+39.29 32+83.23 32+83.23 32+83.35 00+41.42 00+40.26 00+48.76 00+45.34 00+39.43 00+40.30 37+05.10	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT 16.55 RT 17.14 LT 12.88 LT 11.92 RT 25.37 LT 26.00 RT 14.32 LT 11.91 RT 31.57 RT 28.75 LT 13.77 LT 12.87 RT 26.00 LT	- - - - - 23.00' - - - 23.00' - - - - - - -	5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 5.00' 8.33' 8.33' 8.33' 8.33' 8.33' 6.00' 6.00' 6.00' 8.33' 8.33' 8.33' 8.33'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90% -4.20% 1.10% 0.40% -2.10% 0.00% -0.30% -0.30% -1.10% -1.10% -1.00% 1.50% -0.50% -0.50%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67' 6.50' 15.00' 6.50' 11.00' 6.50' 7.67' 6.50' 7.67' 9.00' 7.67' 6.50' 7.67' 7.67' 7.67'	6.50' 6.50' 6.50' 6.50' 6.50' 6.50' 6.50' 7.67' 6.50' 9.00' 7.67' 6.50' 6.50' 7.67' 7.67' 7.67' 6.50' 9.00' 6.50' 6.50' 6.50' 6.50' 6.50'
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	D D A A A A A A A A A A A A A A A A A A	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE MASS AVE ELMHURST ROAD ELMHURST ROAD HARLOW STREET HARLOW STREET MASS AVE EVERETT STREET ORVIS ROAD ORVIS ROAD GRAFTON STREET MASS AVE MASS AVE MASS AVE MASS AVE	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63 00+43.94 00+44.67 00+41.07 00+39.29 32+83.23 32+83.23 32+83.35 00+41.42 00+40.26 00+45.34 00+45.34 00+39.43 00+40.30 37+05.10 37+05.10	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT 16.55 RT 17.14 LT 12.88 LT 11.92 RT 25.37 LT 26.00 RT 14.32 LT 11.91 RT 31.57 RT 28.75 LT 13.77 LT 12.87 RT 26.00 LT 27.02 RT	- - - - - 23.00' - - - 23.00' - - - - -	5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 5.00' 8.33' 8.33' 8.33' 8.33' 8.33' 6.00' 6.00' 6.00' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90% -4.20% 1.10% 0.40% -2.10% 0.00% -0.30% -0.30% -1.10% -1.00% -1.10% -1.50% -0.50% 0.50%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67' 6.50' 15.00' 6.50' 11.00' 6.50' 7.67' 6.50' 7.67' 9.00' 7.67' 6.50' 7.67' 6.50' 7.67' 6.50'	6.50' 6.50' 6.50' 6.50' 6.50' 6.50' 6.50' 7.67' 6.50' 9.00' 7.67' 6.50' 6.50' 7.67' 7.67' 7.67' 6.50' 6.50' 7.67' 7.67' 7.67' 7.67' 7.67' 7.67' 7.67' 7.67' 7.67'
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	D D A A A A A A A A A A A A A A A A A A	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE ELMHURST ROAD ELMHURST ROAD HARLOW STREET HARLOW STREET MASS AVE EVERETT STREET ORVIS ROAD ORVIS ROAD GRAFTON STREET MASS AVE MASS AVE MASS AVE GRAFTON STREET MASS AVE MASS AVE MASS AVE OXFORD STREET	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63 00+43.94 00+44.67 00+41.07 00+39.29 32+83.23 32+83.35 00+41.42 00+40.26 00+48.76 00+45.34 00+45.34 00+39.43 00+40.30 37+05.10 00+42.18	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT 16.55 RT 17.14 LT 12.88 LT 11.92 RT 25.37 LT 26.00 RT 14.32 LT 11.91 RT 31.57 RT 28.75 LT 13.77 LT 12.87 RT 26.00 LT 27.02 RT 15.79 LT	- - - - - 23.00' - - - 23.00' - - - - - - - - 23.00'	5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33' 4.00'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90% -4.20% 1.10% 0.40% -2.10% 0.00% -0.30% -0.30% -1.10% -1.10% -1.00% -1.50% -0.50% -0.50% -0.50% -0.90%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67' 6.50' 15.00' 6.50' 11.00' 6.50' 7.67' 6.50' 7.67' 9.00' 7.67' 6.50' 7.67' 6.50' 7.67' 7.67' 7.67' 7.67' 7.67'	6.50' 6.50' 6.50' 6.50' 6.50' 6.50' 6.50' 7.67' 6.50' 9.00' 7.67' 6.50' 6.50' 7.67' 7.67' 7.67' 7.67' 6.50' 7.67' 7.67' 6.50' 7.67' 7.67' 6.50' 6.50' 6.50' 9.00' 6.50' 9.00' 6.50' 6.50'
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	D D A A A A A A A A A A A A A A A A A A	MASS AVE MARION ROAD MARION ROAD BATES ROAD BATES ROAD MASS AVE MASS AVE MASS AVE ELMHURST ROAD ELMHURST ROAD HARLOW STREET HARLOW STREET MASS AVE EVERETT STREET ORVIS ROAD ORVIS ROAD GRAFTON STREET MASS AVE MASS AVE MASS AVE MASS AVE	28+82.30 00+42.16 00+43.51 00+55.33 00+52.45 29+83.70 29+82.63 00+43.94 00+44.67 00+41.07 00+39.29 32+83.23 32+83.23 32+83.35 00+41.42 00+40.26 00+45.34 00+45.34 00+39.43 00+40.30 37+05.10 37+05.10	28.32 RT 12.73 RT 12.48 LT 39.05 LT 26.04 RT 39.19 LT 26.00 RT 16.55 RT 17.14 LT 12.88 LT 11.92 RT 25.37 LT 26.00 RT 14.32 LT 11.91 RT 31.57 RT 28.75 LT 13.77 LT 12.87 RT 26.00 LT 27.02 RT 15.79 LT 13.03 RT	- - - - - 23.00' - - - 23.00' - - - - - - - - - 23.00'	5.00' 5.00'	8.33' 5.00' 6.00' 8.33' 8.33' 8.33' 5.00' 8.33' 8.33' 8.33' 8.33' 8.33' 6.00' 6.00' 6.00' 8.33' 8.33' 8.33' 8.33' 8.33' 8.33'	-0.20% -0.20% +0.40% -0.40% 0.00% -0.50% 0.90% -4.20% 1.10% 0.40% -2.10% 0.00% -0.30% -0.30% -1.10% -1.00% -1.10% -1.50% -0.50% 0.50%	7.67' 7.67' 6.00' 7.67' 6.50' 7.67' 6.50' 15.00' 6.50' 11.00' 6.50' 7.67' 6.50' 7.67' 9.00' 7.67' 6.50' 7.67' 6.50' 7.67' 6.50'	6.50' 6.50' 6.50' 6.50' 6.50' 6.50' 6.50' 7.67' 6.50' 9.00' 7.67' 6.50' 6.50' 7.67' 7.67' 7.67' 6.50' 6.50' 7.67' 7.67' 7.67' 7.67' 7.67' 7.67' 7.67' 7.67' 7.67'

NOTES:

- 1. DETECTABLE WARNING PANELS SHALL BE INSTALLED AS PER STD. DWG. E 107.6.5 DATED AUGUST 2010.
- 2. UTILITY POLES, LIGHT POLE FOUNDATIONS, MAIL BOXES, AND HYDRANTS THAT ARE TO BE RETAINED OR ADJUSTED SHALL BE REMOVED AND RESET IF FIELD CONDITIONS INDICATE THE CLEAR PATH OF TRAVEL ON THE SIDEWALK IS LESS THAN 36" IN WIDTH.
- 3. ADA/MA AAB REQUIREMENTS SHALL BE FOLLOWED.
- 4. * = TOLERANCE FOR CONSTRUCTION = 0.5%±
- 5. ** = SEE WHEELCHAIR RAMP PAIR WITH 3" REVEAL DETAIL SHEET NO. 124.

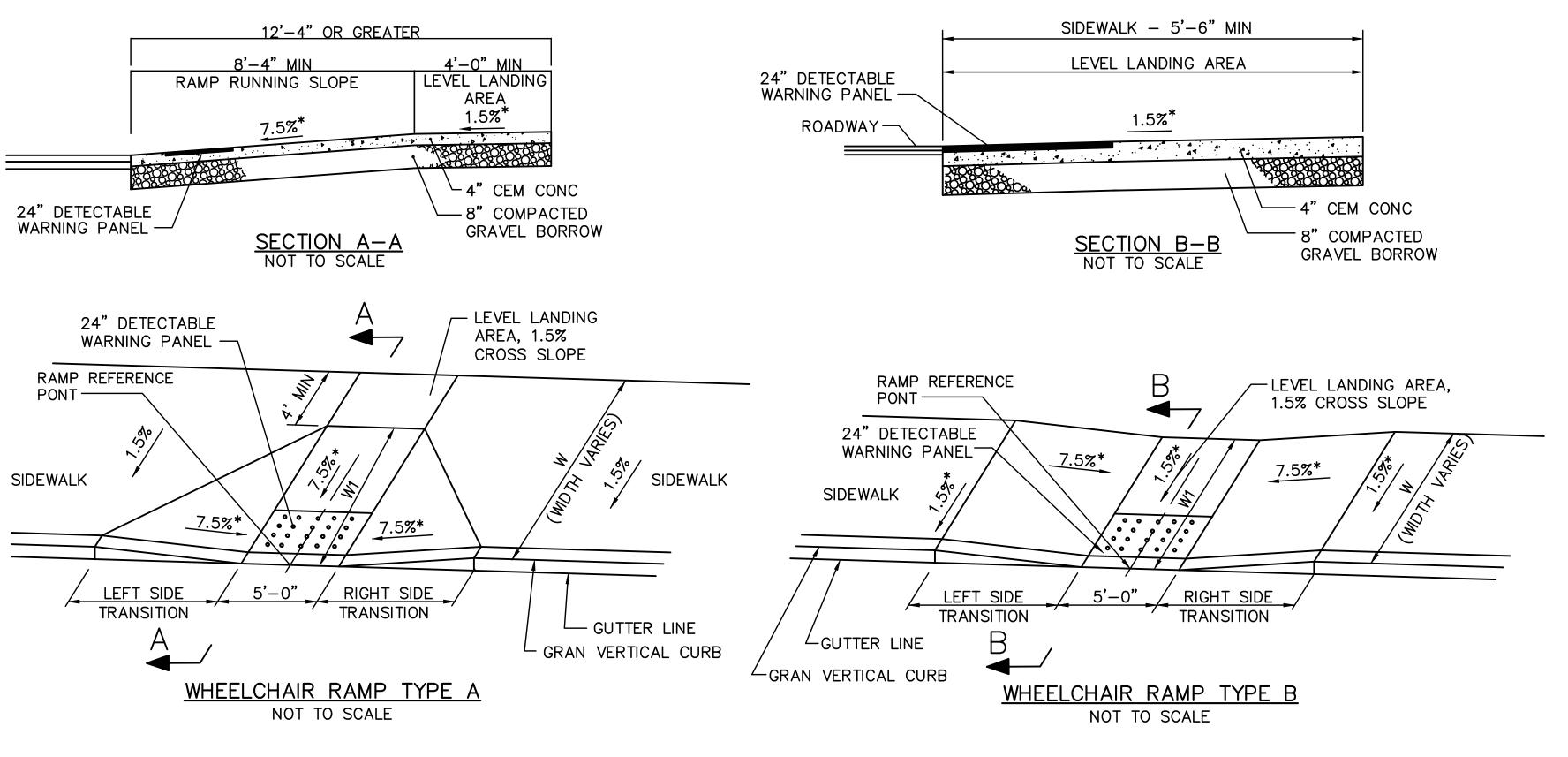
ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3

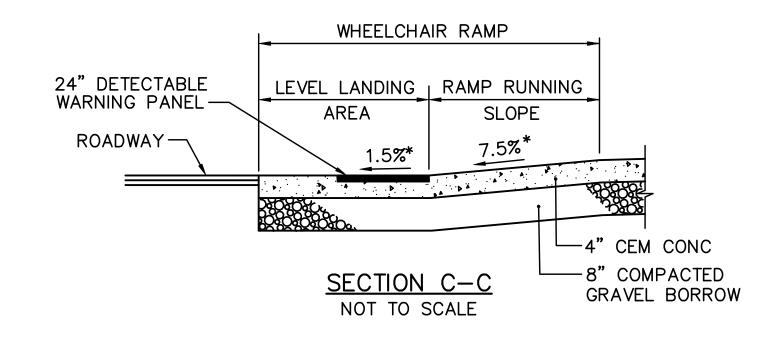
STATE FED. AID PROJ. NO. SHEET TOTAL NO. SHEETS

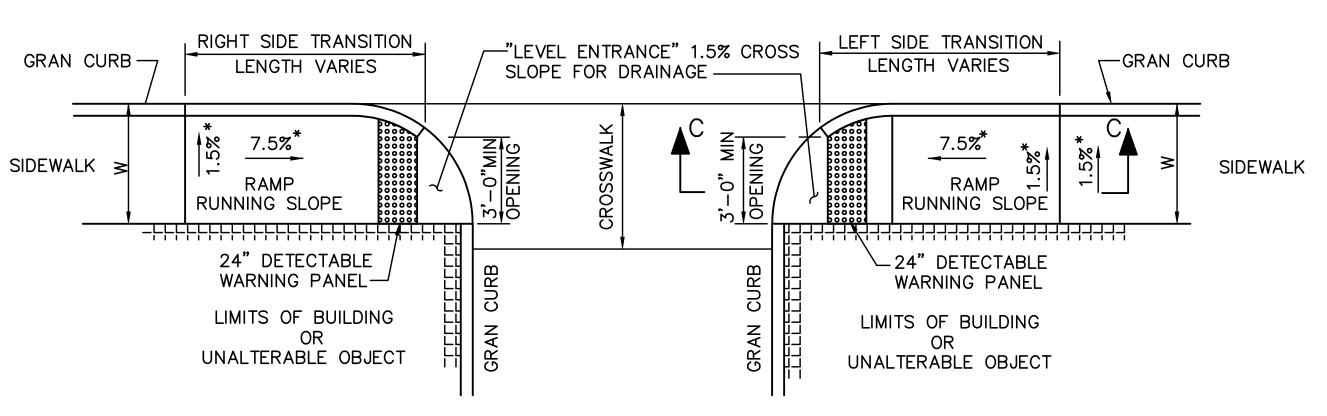
MASS. 123 177

PROJECT FILE NO. 604687

WHEELCHAIR RAMP AND DRIVEWAY DETAILS
PART 1 OF 3







WHEELCHAIR RAMP TYPE C
NOT TO SCALE

PS&T DWG. NO.

QA-013

DES BTR CHK JMM

DR MJC CHK JMM

DR MJC CHK JMM
EST MJC CHK JMM

ENGINEER IN CHARGE

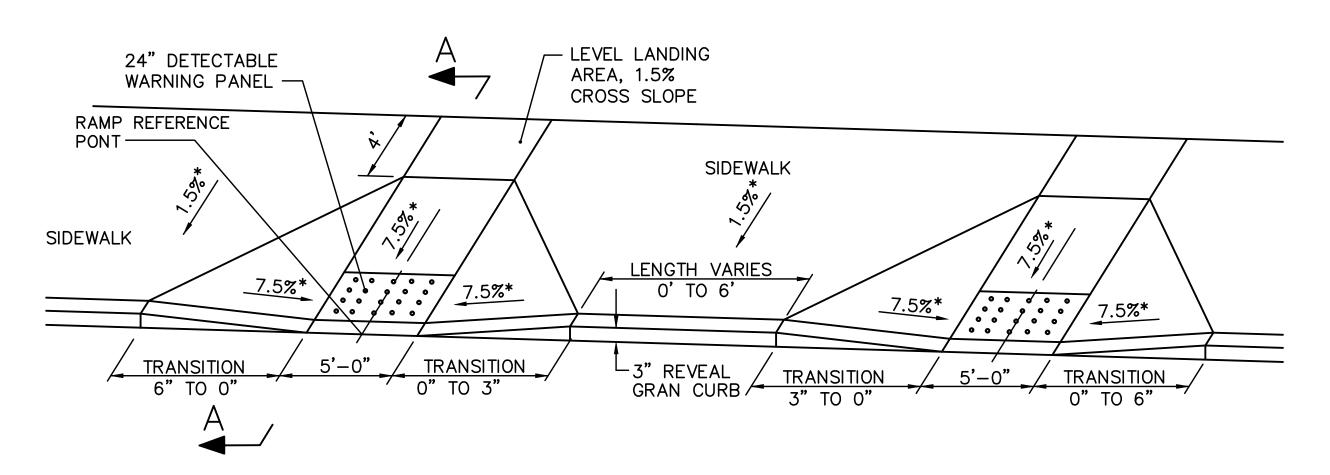
ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
MASS.		124	177	
	PROJECT FILE NO. 60	04687		

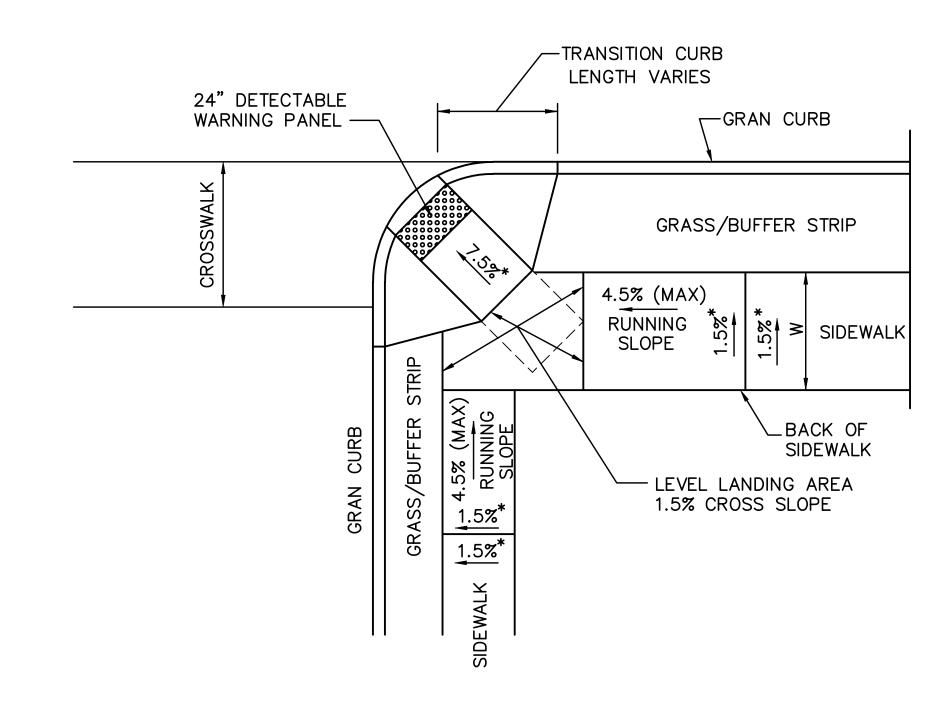
WHEELCHAIR RAMP AND DRIVEWAY DETAILS
PART 2 OF 3

WHEELCHAIR RAMP LAYOUT DATA

	WCR RAMP		RAMP REFERENCE POINT			WIDTH OF SIDEWALK		1	ROADWAY	TRANSITION LENGTH	
	#	TYPE	BASELINE	STATION	OFFSET	(W)	RAMP	OF RAMP	GUTTER SLOPE	LEFT SIDE	RIGHT SIDE
	53	Α	MASS AVE	42+68.59	30.87 LT	18.00'	5.00'	8.33'	-1.10%	9.00'	6.50'
	54	Α	MASS AVE	42+68.59	35.00 RT	14.00'	5.00'	8.33'	0.40%	6.50'	7.67'
	55	В	LAKE STREET	00+60.05	26.80 RT	_	5.00'	3.77	0.00%	6.50'	6.50'
**	56	Α	LAKE STREET	00+40.14	17.13 LT	_	5.00'	8.33'	0.00%	6.50'	6.50'
**	57	Α	MASS AVE	43+56.80		14.00'	5.00'	8.33'	0.30%	6.50'	7.67'
	58	Α	MASS AVE	43+56.80	-	19.33'	5.00'	8.33'	-1.10%	9.00'	6.50'
	59	В	CHANDLER STREET	00+42.41		_	5.00'	5.50'	1.20%	6.50'	7.67'
	60	В	CHANDLER STREET	00+42.21	13.23 LT	_	5.00'	4.00'	-0.80%	7.67'	6.50'
	61	Α	CLEVELAND STREET	00+41.94	14.25 LT	_	5.00'	8.33'	1.70%	6.50'	9.00'
	62	Α	CLEVELAND STREET	00+39.11	14.04 RT	_	5.00'	8.33'	-1.10%	9.00'	6.50'
	63	A	EGERTON ROAD	00+40.50		_	5.00'	8.33'	1.00%	6.50'	7.67'
	64	A	EGERTON ROAD	00+40.14	12.35 LT	_	5.00'	8.33'	-0.60%	7.67	6.50'
	65	A	MARATHON STREET	00+40.74		_	5.00'	8.33'	0.80%	6.50'	7.67
	66	A	MARATHON STREET	00+38.84		_	5.00'	8.33'	0.00%	6.50'	6.50'
	67	A	MASS AVE	48+13.80		_	5.00'	8.33'	0.68%	7.67	6.50'
	68	A	MASS AVE	48+13.80		_	5.00	8.33	0.68%	6.50'	7.67
	69	D	MELROSE STREET	00+41.18		_	5.00	4.50	2.60%	6.50'	11.00'
	70	D	MELROSE STREET	00+41.18	15.34 LT		5.00	4.00'	-1.40%	3.00'	6.50'
	71	A	TROWBRIDGE STREET	00+40.61	13.13 LT	_	5.00'	8.33'	1.30%	6.50'	9.00'
	72	A	TROWBRIDGE STREET	00+37.55		_	5.00'	8.33	-1.80%	9.00'	6.50'
	73		MASS AVE	51+06.82		_	5.00	8.33	0.00%	6.50	
**	74	A	MASS AVE	51+06.82		 _			-1.40%		6.50'
**			MILTON STREET	_			5.00'	8.33'		6.50'	3.00'
~ ~	75	A		00+39.38		_	5.00'	8.33'	- 0.00%		
	76	D	MILTON STREET	00+41.18		_	5.00'	4.50'	0.00%	6.50'	6.50'
	77	A	WINDSOR STREET	00+40.57	-	_	5.00'	8.33'	1.60%	6.50'	9.00'
	78	B A	WINDSOR STREET	00+38.89	13.24 RT	WIDTH OF	5.00'	8.33'	-0.80%	7.67'	6.50'
	WCR #	RAMP TYPE	RAMP REFEREN	CE POINT	POINT		WIDTH OF	OF	ROADWAY GUTTER	TRANSITIO	N LENGTH
			BASELINE	STATION	OFFSET	(W)	RAMP	RAMP	SLOPE		RIGHT SIDE
	79	D	VARNUM STREET	00+41.18	15.09 RT	_	5.00'	4.50'	0.50%	6.50'	7.67
	80	Α	VARNUM STREET	00+39.73	12.55 LT	_	5.00'	8.33'	-0.60%	7.67'	6.50'
	81	Α	MASS AVE	53+80.31	25.00 RT	26.00'	5.00'	8.33'	1.50%	6.50'	9.00'
	82	Α	MASS AVE	53+80.31		16.00'	5.00'	8.33'	-0.70%	7.67'	6.50'
	83	D	AMSDEN STREET	00+41.33	13.88 LT	_	5.00'	4.00'	1.90%	6.50'	9.00'
	84	Α	AMSDEN STREET	00+38.84	13.97 RT	_	5.00'	8.33'	-0.60%	7.67'	6.50'
	85	D	MAGNOLIA STREET	00+41.51	15.44 RT	_	5.00'	4.50'	1.90%	6.50'	9.00'
	86	D	MAGNOLIA STREET	00+40.88	15.06 LT	_	5.00'	4.00'	-1.00%	9.00'	6.50'
	87	Α	MASS AVE	57+99.03		16.00'	5.00'	8.33'	0.30%	6.50'	7.67
	88	***	MASS AVE	58+11.43	33.00 LT	16.00'	5.00'	8.33'	-1.00%	6.83'	6.50'
	89	D	THORNDIKE STREET	00+41.51	13.85 RT	_	5.00'	5.00'	0.30%	6.50'	7.67
	90	D	THORNDIKE STREET	00+41.24	14.24 LT	_	5.00'	5.00'	-0.35%	7.67'	6.50'
	91	Α	TEEL STREET	00+41.28	12.41 LT	_	5.00'	8.33'	-3.00%	14.00'	6.50'
	92	D	TEEL STREET	00+39.37	12.44 RT	_	5.00'	6.00'	0.60%	6.50'	7.67'
	93	D	FAIRMONT STREET	00+39.90	14.75 RT	_	5.00'	5.00'	2.40%	6.50'	11.00'
	94	Α	FAIRMONT STREET	00+40.66	14.64 LT	_	5.00'	8.33'	1.70%	6.50'	9.00'
		Α	HENDERSON STREET	00+42.61	11.30 LT	_	5.00'	8.33'	-2.00%	9.00'	6.50'
	95			00 + 70 16	11.23 RT	_	5.00'	8.33'	0.00%	6.50'	6.50'
	95 96	Α	HENDERSON STREET	00+38.16					1		
			HENDERSON STREET MASS AVE		26.00 LT	23.00'	5.00'	8.33'	-1.90%	6.00'	6.50'
	96 97	Α		62+85.69			5.00' 5.00'	8.33' 8.33'	-1.90% 0.00%	6.00' 6.50'	6.50' 6.50'
	96 97	A A A	MASS AVE MASS AVE	62+85.69 62+85.69	26.00 LT 24.00 RT	25.00'	5.00'	8.33'	0.00%	6.50'	6.50'
	96 97 98 99	A A A	MASS AVE MASS AVE LAFAYETTE STREET	62+85.69 62+85.69 00+37.77	26.00 LT 24.00 RT 12.55 RT	25.00'	5.00' 5.00'	8.33' 8.33'	0.00% 4.60%	6.50' 6.50'	6.50' 9.00'
	96 97 98	A A A	MASS AVE MASS AVE	62+85.69 62+85.69 00+37.77 00+39.08	26.00 LT 24.00 RT	25.00' —	5.00'	8.33'	0.00%	6.50'	6.50'



WHEELCHAIR RAMP PAIR WITH 3" REVEAL DETAIL NOT TO SCALE



WHEELCHAIR RAMP TYPE D
NOT TO SCALE

NOTE: * TOLERANCE FOR CONSTRUCTION = $0.5\%\pm$

- ** SEE WHEELCHAIR RAMP PAIR WITH 3" REVEAL DETAIL THIS SHEET
- *** SEE MASSDOT STD DWG E107.6.9R FOR WHEELCHAIR RAMP WITH LANDSCAPING STRIP

FS&T DWG. NO.

DES BTR CHK JMM

DR MJC CHK JMM

ENGINEED IN CHARG

DRIVEWAY OPENING LAYOUT DATA

	FERENCE PO	DINT	WIDTH OF	WIDTH OF	ROADWAY
BASELINE	STATION	OFFSET	SIDEWALK (W)	DRIVEWAY	GUTTER SLOPE
MASS AVE MASS AVE	12+60.53 12+90.10	32.28 RT 31.39 LT	8.00' 8.00'	10.32 ' 11.00'	-1.20 -0.50
MASS AVE	13+68.96	33.00 RT	8.00'	35.09	-0.40
MASS AVE	13+92.55	32.00 LT	8.00'	19.92'	0.60
MASS AVE	14+84.17	33.00 RT	8.00'	22.31'	-0.50
MASS AVE	15+56.52	33.00 RT	8.00'	30.99	-0.60
MASS AVE	18+12.26	33.00 LT	8.00'	14.74'	0.50
MASS AVE	19+39.68	33.00 RT	8.00'	28.58'	-0.80
MASS AVE	20+03.98	33.00 RT	8.00'	36.38'	-0.40
MASS AVE MASS AVE	20+41.79	33.00 LT 33.00 RT	8.00'	19.30'	0.50 -0.50
MASS AVE	20+81.99	33.00 RT 33.00 LT	8.00' 8.00'	38.73' 17.13'	1.20
MASS AVE	22+18.26	33.00 RT	8.00'	40.21	-0.80
MASS AVE	22+87.65	33.00 RT	8.00'	15.73'	-0.60
MASS AVE	23+27.10	33.00 LT	8.00'	18.06'	0.50
MASS AVE	23+58.40	33.24 RT	8.00'	19.04'	-0.60
LINWOOD STREET	01+11.38	12.17 LT	4.54'	11.94'	-2.40
MASS AVE	25+17.78	34.00 RT	6.00'	14.03'	0.20
MASS AVE	25+17.69	33.00 LT	16.00'	14.80'	0.00
MASS AVE	25+45.22	33.00 LT	8.00'	24.79'	-0.20
DRIVEWAY RE	FERENCE PO	DINT	WIDTH OF	WIDTH OF	ROADWAY
BASELINE	STATION	OFFSET	SIDEWALK (W)	DRIVEWAY	GUTTER SLOPE
MASS AVE	26+39.68	33.00 LT	8.00'	29.31'	-0.20
MASS AVE	26+53.27	34.00 RT	6.00'	8.94'	0.70
MASS AVE	27+07.25	34.00 RT	6.00'	14.81'	0.20
MASS AVE	27+78.61	34.00 RT	6.00'	12.96'	-0.70
MASS AVE	28+34.90	34.00 RT	6.00'	16.40'	0.70
BATES ROAD	01+08.45	23.00 RT	4.67'	23.26'	-0.70
MASS AVE	30+35.16	33.00 LT	8.00'	15.93'	-0.50
MASS AVE	30+89.19	33.00 LT	8.00'	12.00'	-0.30
MASS AVE	33+46.29	33.00 LT	8.00'	15.40'	0.00
MASS AVE	33+93.35	34.00 RT	6.00'	15.90'	0.40
MASS AVE	35+24.24	34.00 RT	6.00'	10.91'	-0.20
MASS AVE	35+90.35	33.00 LT	8.00'	34.10'	0.60
GRAFTON STREET MASS AVE	01+51.26 38+01.61	29.89 LT 34.00 RT	5.00'	18.13'	0.40 -0.70
MASS AVE	38+69.82	34.00 RT	8.00' 8.00'	15.88' 18.02'	-0.70 -0.50
MASS AVE	39+45.19	34.00 RT	8.00'	15.59	-0.10
					0.10
MASS AVE	140+14.84	L34.00 RT	1 0.00	16.99'	-0.60
MASS AVE MASS AVE	40+14.84	34.00 RT 34.00 LT	8.00' 8.00'	16.99 ' 15.51 '	-0.60 0.20
MASS AVE MASS AVE MASS AVE	40+14.84 40+36.59 40+73.93	34.00 RT 34.00 LT 34.41 RT	8.00'	15.51'	-0.60 0.20 1.10
MASS AVE	40+36.59	34.00 LT	8.00' 8.00' 8.00'		0.20
MASS AVE MASS AVE	40+36.59 40+73.93 41+08.33	34.00 LT 34.41 RT 36.85 LT	8.00' 8.00' 8.00' WIDTH OF	15.51' 30.71' 18.50'	0.20 1.10 -1.10 ROADWAY
MASS AVE MASS AVE MASS AVE DRIVEWAY RE	40+36.59 40+73.93 41+08.33 FERENCE PO	34.00 LT 34.41 RT 36.85 LT DINT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK	15.51' 30.71'	0.20 1.10 -1.10 ROADWAY GUTTER
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE	40+36.59 40+73.93 41+08.33 FERENCE PO STATION	34.00 LT 34.41 RT 36.85 LT DINT OFFSET	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W)	15.51' 30.71' 18.50' WIDTH OF DRIVEWAY	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE PO STATION 48+92.89	34.00 LT 34.41 RT 36.85 LT DINT OFFSET 33.00 LT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00'	15.51' 30.71' 18.50' WIDTH OF DRIVEWAY 19.94'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE PO STATION 48+92.89 49+53.09	34.00 LT 34.41 RT 36.85 LT DINT OFFSET 33.00 LT 33.00 LT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00'	15.51' 30.71' 18.50' WIDTH OF DRIVEWAY 19.94' 16.86'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE MASS AVE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE PO STATION 48+92.89 49+53.09 51+61.68	34.00 LT 34.41 RT 36.85 LT DINT OFFSET 33.00 LT 33.00 LT 33.00 LT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00' 8.00'	15.51' 30.71'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE MASS AVE MASS AVE MASS AVE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE PO STATION 48+92.89 49+53.09 51+61.68 52+07.91	34.00 LT 34.41 RT 36.85 LT OINT OFFSET 33.00 LT 33.00 LT 33.00 LT 33.00 RT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00' 8.00' 8.00'	15.51' 30.71' 18.50' WIDTH OF DRIVEWAY 19.94' 16.86' 12.62' 17.73'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70 0.70
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE MASS AVE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE PO STATION 48+92.89 49+53.09 51+61.68 52+07.91 52+64.52	34.00 LT 34.41 RT 36.85 LT OINT OFFSET 33.00 LT 33.00 LT 33.00 RT 33.00 RT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00' 8.00' 8.00' 8.00'	15.51' 30.71'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70 0.70 0.80
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE MASS AVE MASS AVE MASS AVE MASS AVE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE PO STATION 48+92.89 49+53.09 51+61.68 52+07.91	34.00 LT 34.41 RT 36.85 LT OINT OFFSET 33.00 LT 33.00 LT 33.00 RT 33.00 RT 33.00 RT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00' 8.00' 8.00'	15.51' 30.71'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70 0.70
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE PO STATION 48+92.89 49+53.09 51+61.68 52+07.91 52+64.52 54+62.78	34.00 LT 34.41 RT 36.85 LT OINT OFFSET 33.00 LT 33.00 LT 33.00 RT 33.00 RT 33.00 RT 33.00 LT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00' 8.00' 8.00' 8.00' 8.00' 8.00'	15.51' 30.71'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70 0.70 0.80 0.70
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE PO STATION 48+92.89 49+53.09 51+61.68 52+07.91 52+64.52 54+62.78 56+38.76	34.00 LT 34.41 RT 36.85 LT OINT OFFSET 33.00 LT 33.00 LT 33.00 RT 33.00 RT 33.00 RT 33.00 LT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00'	15.51' 30.71' 18.50' WIDTH OF DRIVEWAY 19.94' 16.86' 12.62' 17.73' 14.11' 11.28' 11.78'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70 0.70 0.80 0.70 -1.30
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE PO STATION 48+92.89 49+53.09 51+61.68 52+07.91 52+64.52 54+62.78 56+38.76 56+90.93	34.00 LT 34.41 RT 36.85 LT DINT OFFSET 33.00 LT 33.00 LT 33.00 RT 33.00 RT 33.00 RT 33.00 LT 33.00 RT 33.00 LT 33.00 RT 33.00 LT 33.00 RT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00'	15.51' 30.71' 18.50' WIDTH OF DRIVEWAY 19.94' 16.86' 12.62' 17.73' 14.11' 11.28' 11.78' 21.65'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70 0.70 0.80 0.70 -1.30 -0.50
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE PO STATION 48+92.89 49+53.09 51+61.68 52+07.91 52+64.52 54+62.78 56+38.76 56+90.93 57+13.28 57+77.03 57+94.87	34.00 LT 34.41 RT 36.85 LT OINT OFFSET 33.00 LT 33.00 LT 33.00 RT 33.00 RT 33.00 LT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00'	15.51' 30.71'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70 0.70 0.80 0.70 -1.30 -0.50 0.70 0.60 0.30
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE POSTATION 48+92.89 49+53.09 51+61.68 52+07.91 52+64.52 54+62.78 56+38.76 56+90.93 57+13.28 57+77.03 57+94.87 59+40.50	34.00 LT 34.41 RT 36.85 LT DINT OFFSET 33.00 LT 33.00 LT 33.00 RT 33.00 RT 33.00 LT 33.00 RT 33.00 RT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00'	15.51' 30.71'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70 0.70 0.80 0.70 -1.30 -0.50 0.70 0.60 0.30 1.70
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE POSTATION 48+92.89 49+53.09 51+61.68 52+07.91 52+64.52 54+62.78 56+38.76 56+90.93 57+13.28 57+77.03 57+94.87 59+40.50 59+49.63	34.00 LT 34.41 RT 36.85 LT OINT OFFSET 33.00 LT 33.00 LT 33.00 RT 33.00 RT 33.00 LT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00'	15.51' 30.71' 18.50' WIDTH OF DRIVEWAY 19.94' 16.86' 12.62' 17.73' 14.11' 11.28' 11.78' 21.65' 34.65' 19.66' 10.47' 11.13' 11.53'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70 0.70 0.80 0.70 -1.30 -0.50 0.70 0.60 0.30 1.70 -0.50
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE POSTATION 48+92.89 49+53.09 51+61.68 52+07.91 52+64.52 54+62.78 56+38.76 56+90.93 57+13.28 57+77.03 57+94.87 59+40.50 59+49.63 59+87.81	34.00 LT 34.41 RT 36.85 LT OINT OFFSET 33.00 LT 33.00 LT 33.00 RT 33.00 RT 33.00 LT 33.00 RT 33.00 RT 33.00 RT 33.00 RT 33.00 RT 33.00 RT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00'	15.51' 30.71' 18.50' WIDTH OF DRIVEWAY 19.94' 16.86' 12.62' 17.73' 14.11' 11.28' 11.78' 21.65' 34.65' 19.66' 10.47' 11.13' 11.53' 11.82'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70 0.70 0.80 0.70 -1.30 -0.50 0.70 0.60 0.30 1.70 -0.50 1.70
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE POSTATION 48+92.89 49+53.09 51+61.68 52+07.91 52+64.52 54+62.78 56+38.76 56+90.93 57+13.28 57+77.03 57+94.87 59+40.50 59+49.63 59+87.81 60+41.44	34.00 LT 34.41 RT 36.85 LT DINT OFFSET 33.00 LT 33.00 RT 33.00 RT 33.00 LT 33.00 RT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00'	15.51' 30.71' -18.50' WIDTH OF DRIVEWAY 19.94' 16.86' 12.62' 17.73' 14.11' 11.28' 11.78' 21.65' 34.65' 19.66' 10.47' 11.13' 11.53' 11.82' 10.86'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70 0.70 0.80 0.70 -1.30 -0.50 0.70 0.60 0.30 1.70 -0.50 1.70 -1.20
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE POSTATION 48+92.89 49+53.09 51+61.68 52+07.91 52+64.52 54+62.78 56+38.76 56+90.93 57+13.28 57+77.03 57+94.87 59+40.50 59+49.63 59+87.81 60+41.44 61+34.10	34.00 LT 34.41 RT 36.85 LT OINT OFFSET 33.00 LT 33.00 LT 33.00 RT 33.00 RT 33.00 LT 33.00 RT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 8.00' 11.00'	15.51' 30.71'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70 0.70 0.80 0.70 -1.30 -0.50 0.70 0.60 0.30 1.70 -0.50 1.70 -1.20 1.80
MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE POST STATION 48+92.89 49+53.09 51+61.68 52+07.91 52+64.52 54+62.78 56+38.76 56+90.93 57+13.28 57+77.03 57+94.87 59+40.50 59+49.63 59+87.81 60+41.44 61+34.10 61+98.99	34.00 LT 34.41 RT 36.85 LT OINT OFFSET 33.00 LT 33.00 RT 33.00 RT 33.00 RT 33.00 LT 33.00 RT 33.00 LT 33.00 RT 33.00 LT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00'	15.51' 30.71' 18.50' WIDTH OF DRIVEWAY 19.94' 16.86' 12.62' 17.73' 14.11' 11.28' 11.78' 21.65' 34.65' 19.66' 10.47' 11.13' 11.53' 11.82' 10.86' 14.71' 10.38'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70 0.70 0.80 0.70 -1.30 -0.50 0.70 0.60 0.30 1.70 -0.50 1.70 -1.20 1.80 -1.10
MASS AVE MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE 40+36.59 40+73.93 41+08.33 FERENCE POST STATION 48+92.89 49+53.09 51+61.68 52+07.91 52+64.52 54+62.78 56+38.76 56+90.93 57+13.28 57+77.03 57+94.87 59+40.50 59+49.63 59+87.81 60+41.44 61+34.10 61+98.99 62+33.30	34.00 LT 34.41 RT 36.85 LT DINT OFFSET 33.00 LT 33.00 RT 33.00 RT 33.00 LT 33.00 RT 8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00'	15.51' 30.71' -18.50' WIDTH OF DRIVEWAY 19.94' 16.86' 12.62' 17.73' 14.11' 11.28' 11.78' 21.65' 34.65' 19.66' 10.47' 11.13' 11.53' 11.82' 10.86' 14.71' 10.38' 13.05'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70 0.70 0.80 0.70 -1.30 -0.50 0.70 0.60 0.30 1.70 -0.50 1.70 -1.20 1.80 -1.10 1.80		
MASS AVE MASS AVE DRIVEWAY RE BASELINE MASS AVE	40+36.59 40+73.93 41+08.33 FERENCE POST STATION 48+92.89 49+53.09 51+61.68 52+07.91 52+64.52 54+62.78 56+38.76 56+90.93 57+13.28 57+77.03 57+94.87 59+40.50 59+49.63 59+87.81 60+41.44 61+34.10 61+98.99	34.00 LT 34.41 RT 36.85 LT OINT OFFSET 33.00 LT 33.00 RT 33.00 RT 33.00 RT 33.00 LT 33.00 RT 33.00 LT 33.00 RT 33.00 LT	8.00' 8.00' 8.00' WIDTH OF SIDEWALK (W) 8.00'	15.51' 30.71' 18.50' WIDTH OF DRIVEWAY 19.94' 16.86' 12.62' 17.73' 14.11' 11.28' 11.78' 21.65' 34.65' 19.66' 10.47' 11.13' 11.53' 11.82' 10.86' 14.71' 10.38'	0.20 1.10 -1.10 ROADWAY GUTTER SLOPE -0.70 -0.20 -1.70 0.70 0.80 0.70 -1.30 -0.50 0.70 0.60 0.30 1.70 -0.50 1.70 -1.20 1.80 -1.10

NOTES:

- 1. ADA/MA AAB REQUIREMENTS SHALL BE FOLLOWED.
- 2. * = TOLERANCE FOR CONSTRUCTION = $0.5\%\pm$

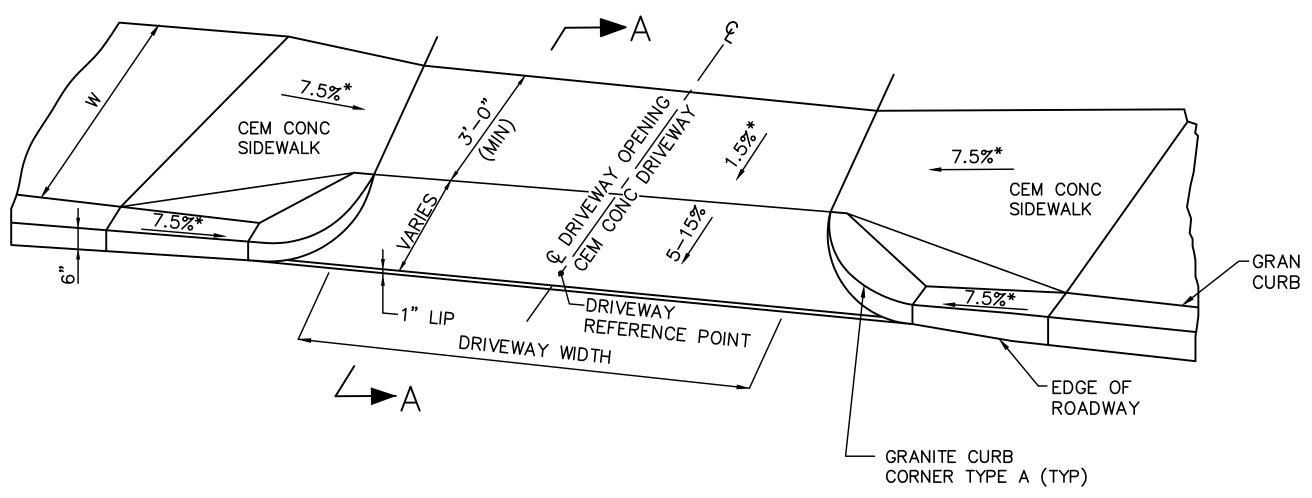
ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3

STATE FED. AID PROJ. NO. SHEET NO. SHEETS

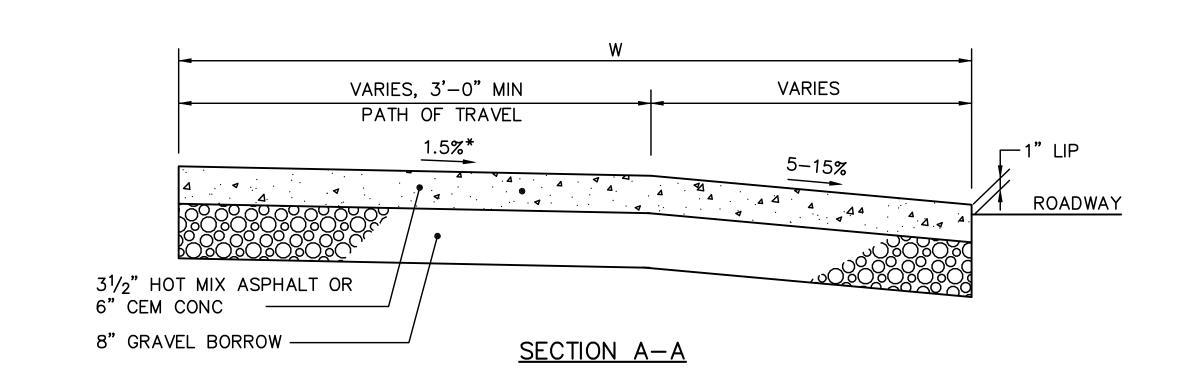
MASS. 125 177

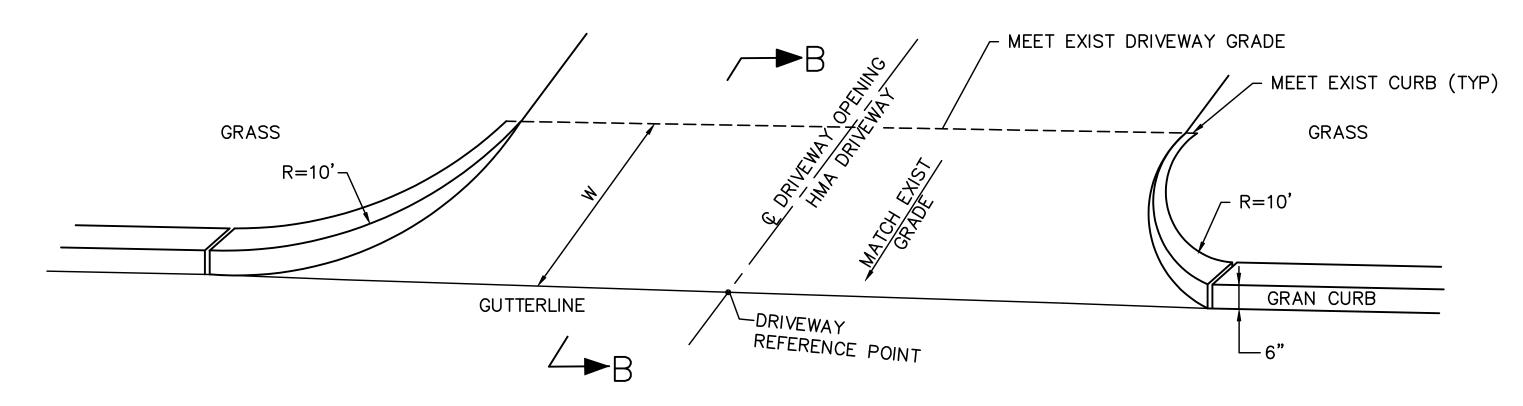
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WHEELCHAIR RAMP AND DRIVEWAY DETAILS PART 3 OF 3



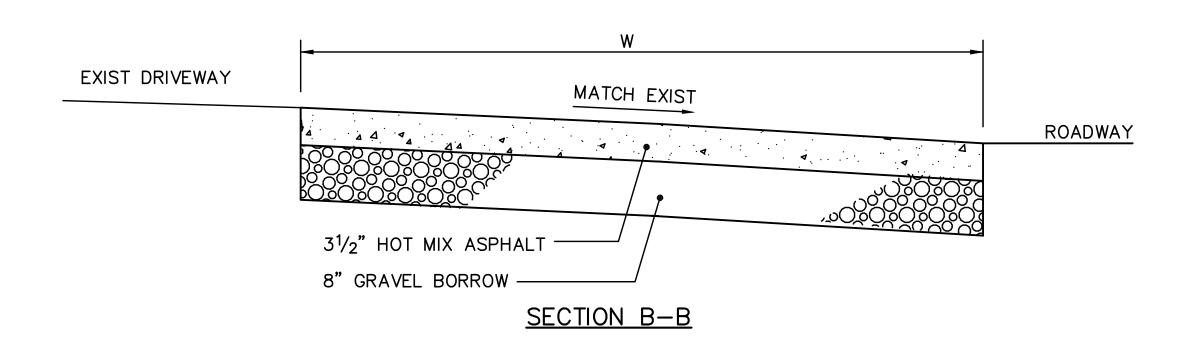
DRIVEWAY OPENING AT SIDEWALK
NOT TO SCALE





DRIVEWAY OPENING (NO SIDEWALK)

NOT TO SCALE



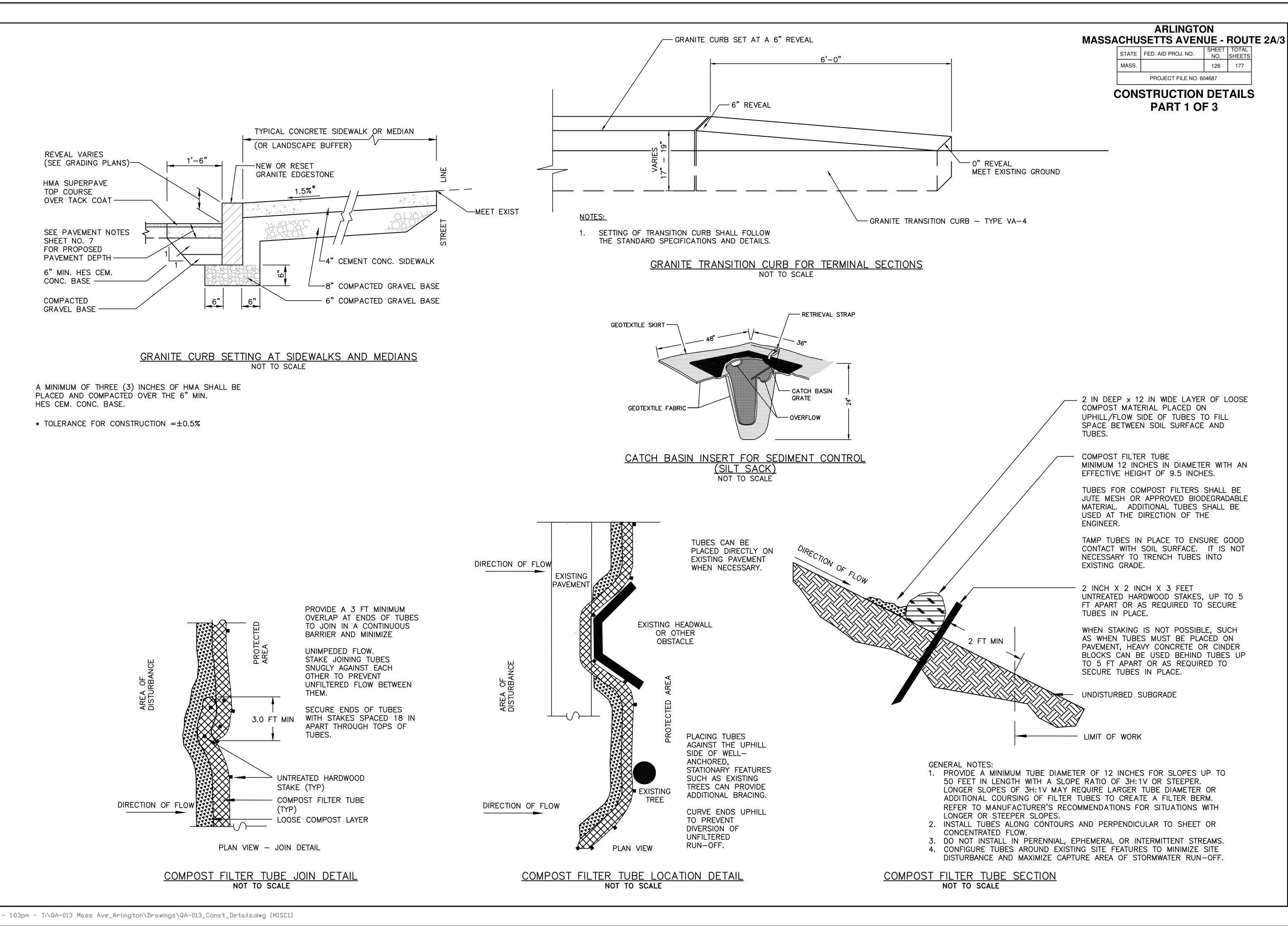
PES BTR CHK JMI

DES BTR CHK JMM

DR MJC CHK JMM

EST MJC CHK JMM

ENGINEED IN CHARGE



FS&T DWG. NO.

QA-013

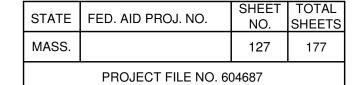
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DR MJC CHK JMM

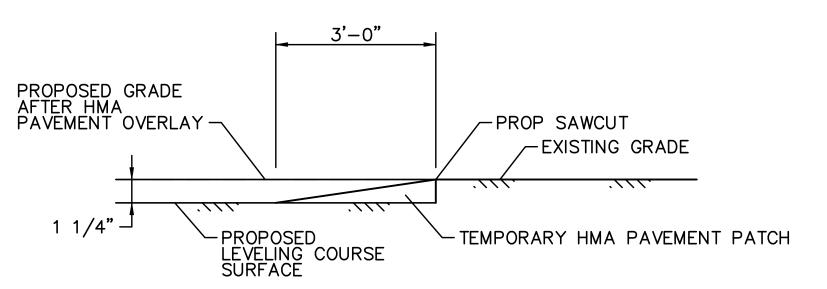
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ENGINEER IN CHARGE

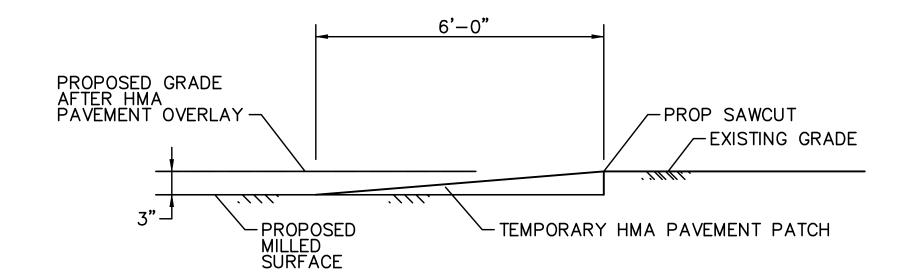
ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3



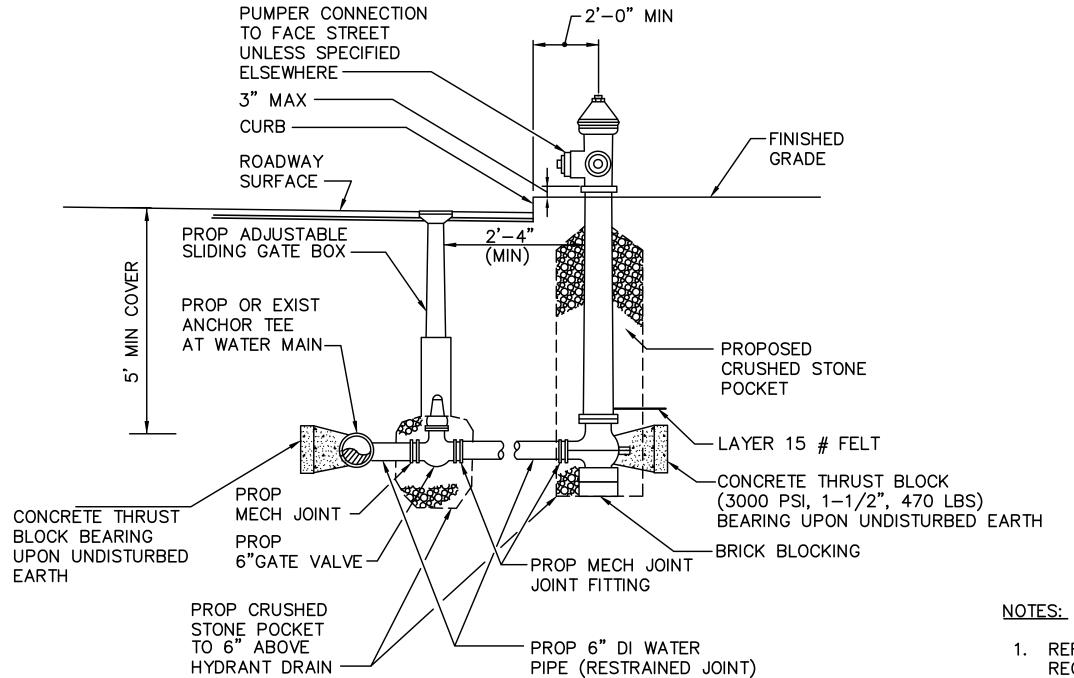
CONSTRUCTION DETAILS
PART 2 OF 3



TEMPORARY PAVEMENT TRANSITION DETAIL AFTER LEVELING COURSE NOT TO SCALE



TEMPORARY PAVEMENT TRANSITION DETAIL AFTER PAVEMENT MILLING NOT TO SCALE



PROPOSED FIRE HYDRANT OR FIRE HYDRANT REMOVED & RESET NOT TO SCALE

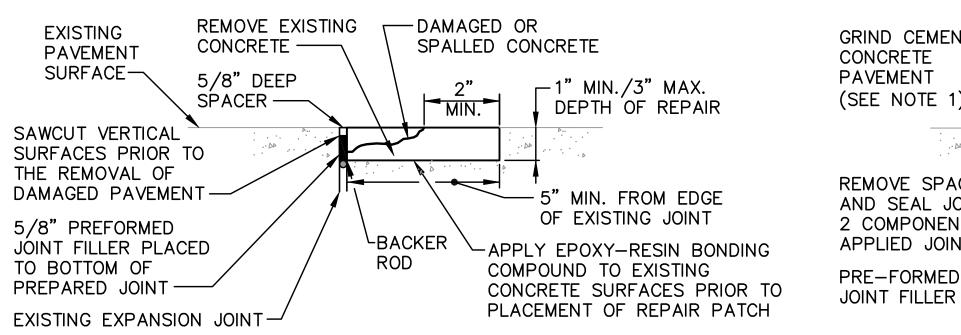
TO PROP TEE

<u>-----</u>

- 1. REFER TO SPECIAL PROVISIONS AND STANDARD SPECIFICATIONS FOR MATERIAL REQUIREMENTS.
- 2. THE CONTRACTOR SHALL RESTRAIN ALL EXISTING PIPE AND FITTINGS WITH CLAMPS, HARNESSES AND/OR ANY OTHER MEANS ACCEPTED BY THE ENGINEER PRIOR TO REMOVING ANY OF THE EXISTING HYDRANT COMPONENTS.
- 3. FOR HYDRANTS RELOCATED TO NEW MAIN CONNECTION LOCATIONS, THE EXISTING TEE WILL BE REMOVED AND REPLACED WITH A MECHANICAL DRESSER COUPLING AND SUITABLE SIZED SECTION OF PIPE.
- 4. ALL HYDRANTS SHALL BE CONSISTENT WITH TOWN OF ARLINGTON WATER DEPARTMENT STANDARDS.
- 5. IF CONCRETE THRUST BLOCK IS USED, DO NOT BLOCK DRAIN.

ENGINEER IN CHARGE

PARTIAL DEPTH PATCHING OF CEMENT CONCRETE PAVEMENT (AT EXPANSION JOINTS)



GRIND CEMENT
CONCRETE
PAVEMENT
(SEE NOTE 1)

5" MIN.

1" MIN./3" MAX.
DEPTH OF REPAIR

BACKER
AND SEAL JOINT WITH
2 COMPONENT COLD
APPLIED JOINT SEALER

PRE—FORMED

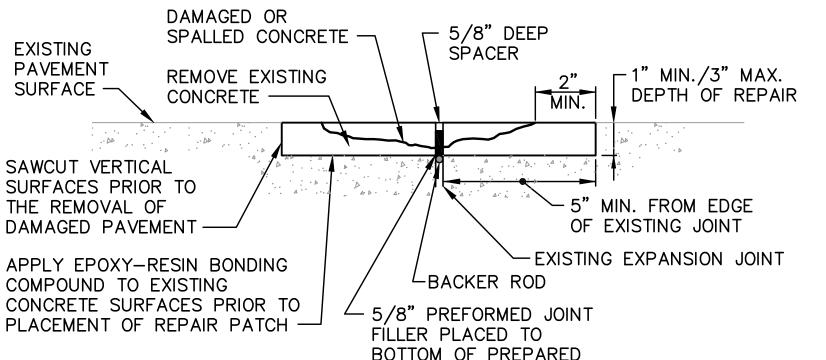
LATEX MODIFIED
MORTAR OVERLAYMENT

EXISTING EXPANSION JOINT

NOTES:

- 1. GRINDING OF CEMENT CONCRETE PAVEMENT SHALL OCCUR AFTER CONCRETE PARTIAL DEPTH REPAIR AND PRIOR TO SAWING, CLEANING AND SEALING JOINTS.
- 2. CLEAN AND SEAL SAWCUT JOINT WITH 2 COMPONENT COLD APPLIED JOINT SEALER (SEE DETAIL THIS SHEET)
- 3. COLD SILICONE SEALANT MAX. THICKNESS SHALL BE 3/8".

SINGLE—SLAB EDGE SPALL REPAIR NOT TO SCALE



SINGLE-SLAB EDGE SPALL PREPARATION

NOT TO SCALE

FILLER PLACED TO
BOTTOM OF PREPARED
JOINT

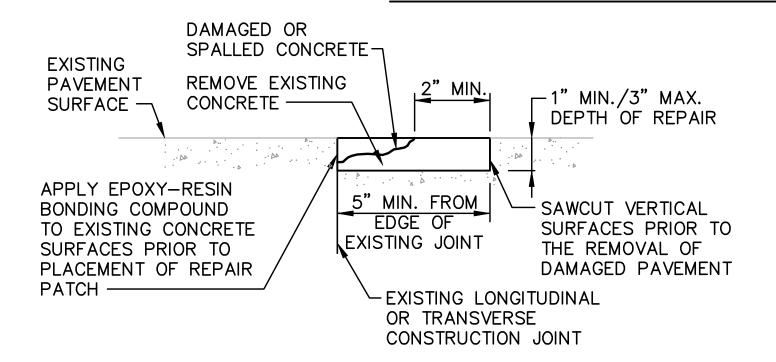
MULTI-SLAB EDGE SPALL PREPARATION
NOT TO SCALE

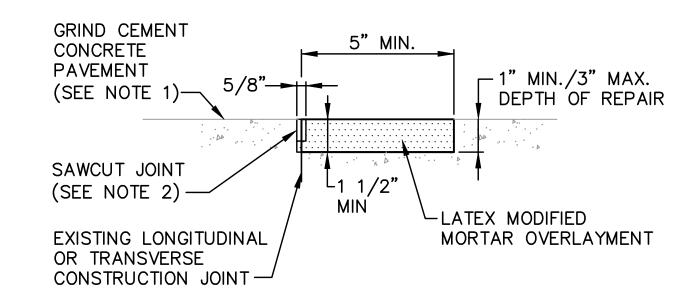
GRIND CEMENT CONCRETE **PAVEMENT** WIDTH VARIES 10" MIN. (SEE NOTE 1)-**⊢** 1" МIN. ∕3" МАХ. DEPTH OF REPAIR 5/8"->|| LATEX MODIFIED MORTAR OVERLAYMENT--BACKER ROD REMOVE SPACER CLEAN -EXISTING EXPANSION JOINT AND SEAL JOINT WITH 2 COMPONENT COLD APPLIED JOINT SEALER -PRE-FORMED JOINT FILLER

MULTI-SLAB EDGE SPALL REPAIR

NOT TO SCALE

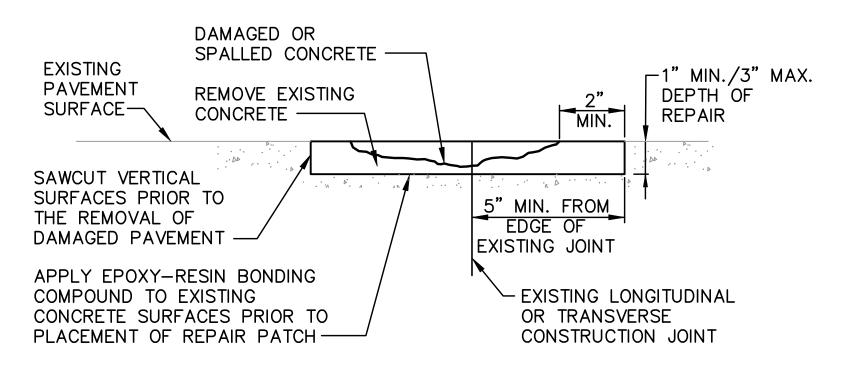
PARTIAL DEPTH PATCHING OF CEMENT CONCRETE PAVEMENT (AT LONGITUDINAL OR TRANSVERSE CONSTRUCTION JOINTS)





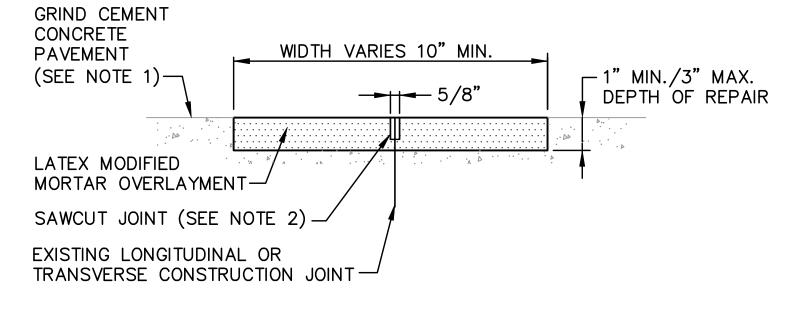
SINGLE-SLAB EDGE SPALL PREPARATION NOT TO SCALE





MULTI-SLAB EDGE SPALL PREPARATION

NOT TO SCALE



MULTI-SLAB EDGE SPALL REPAIR
NOT TO SCALE

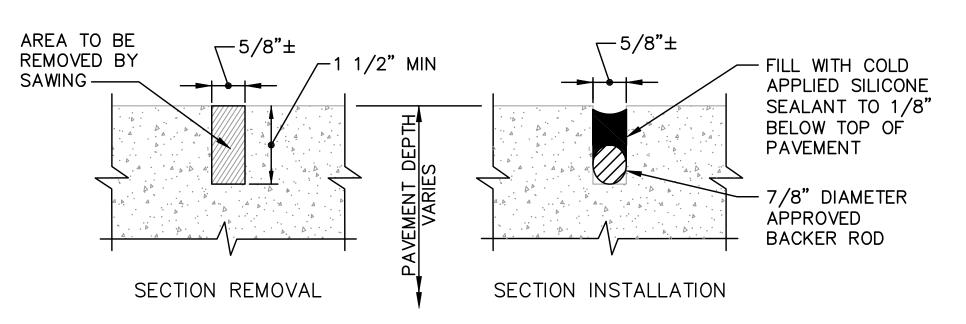
ARLINGTON MASSACHUSETTS AVENUE - ROUTE 2A/3

STATE FED. AID PROJ. NO. SHEET TOTAL NO. SHEETS

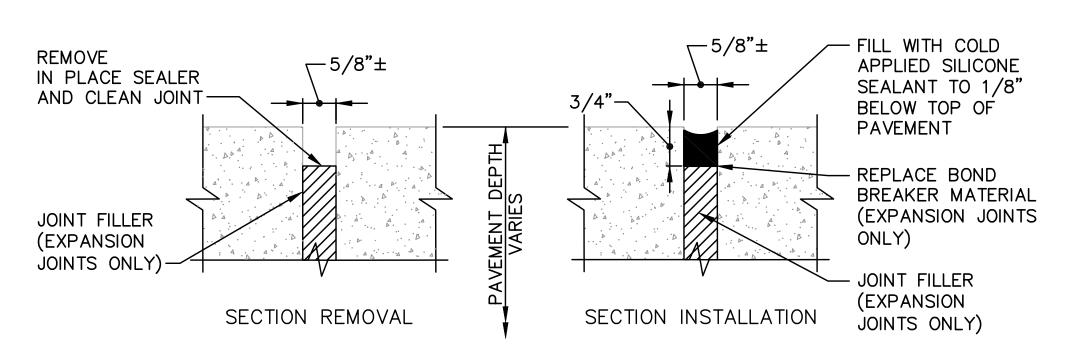
MASS. 128 177

PROJECT FILE NO. 604687

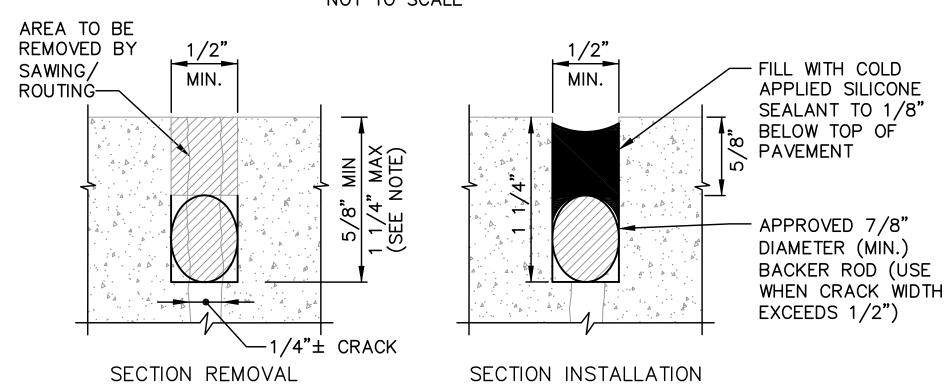
CONSTRUCTION DETAILS
PART 3 OF 3



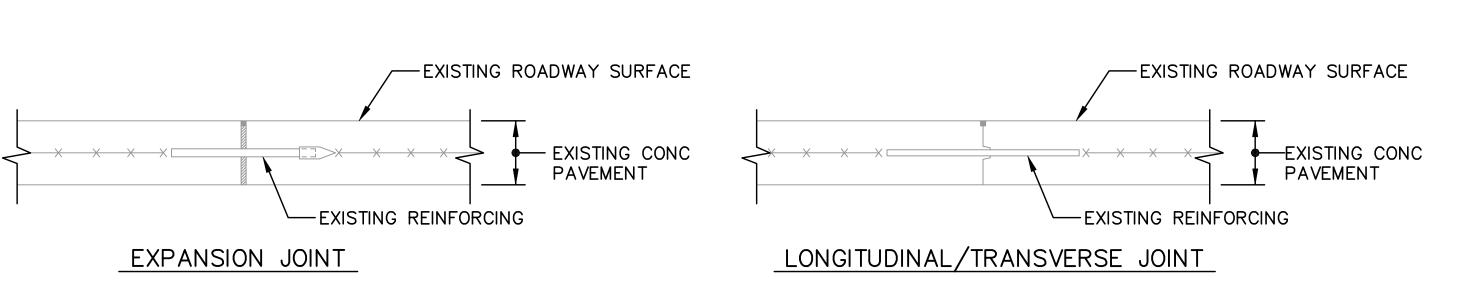
SAWING JOINTS IN REPAIR PATCH NOT TO SCALE



CLEAN AND SEAL EXISTING JOINTS NOT TO SCALE



CRACK REPAIR
NOT TO SCALE



EXISTING CONCRETE ROADWAY JOINT DETAILS

SCALE: 1"=1'-0"

FS&T DWG. NO.

QA-013